

The Monthly Review of the Best Packages

PERSONAL SOFTWARE

Cowen's N Agency
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Civic Centre 48 6738

JUNE 1984 • THE TOP 20 PROGRAMS REVIEW

**This Month We
Share 'Test Drives' of:**

WordStar PAGE 77

R:base 4000 PAGE 87

Dollars & Sense PAGE 95

Millionaire PAGE 108

PC-Talk PAGE 114

**This Month 126 New
Products Were Released**

DETAILS BEGIN ON PAGE 11

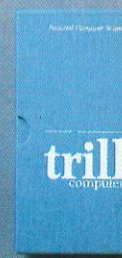
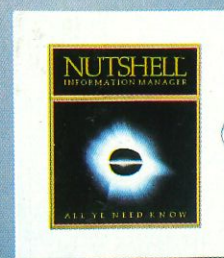
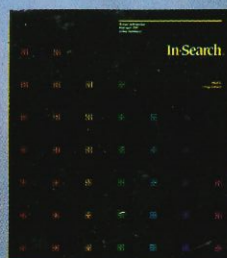
**This Month's 60 Best-
Sellers Were Headed By
Lotus 1-2-3**

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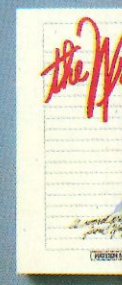
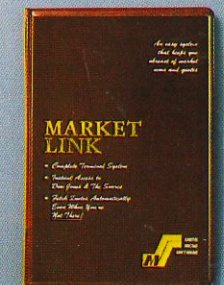
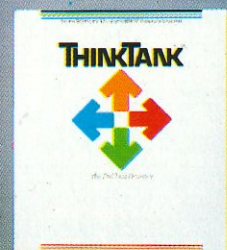
**A Buyer's Guide
On Communications**

BEGINS ON PAGE 121

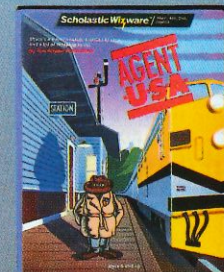
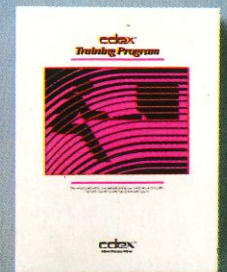
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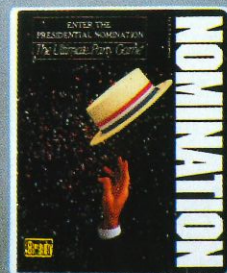
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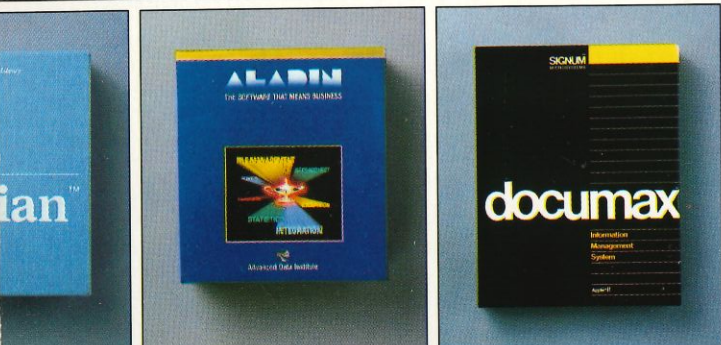
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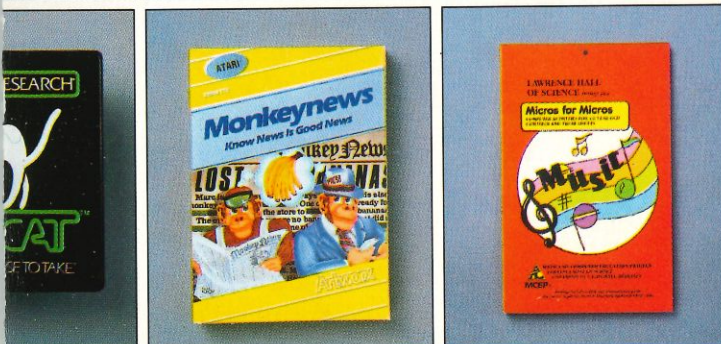
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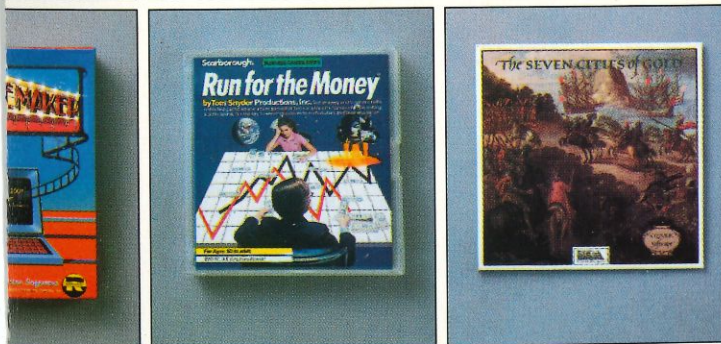
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**PAGES
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**PAGES
67-71**

THINGS THAT MAKE IT EASY

ONE-KEY INSERT AND DELETE
Lets you do word processing's two most common functions the simplest possible way.

MARGIN AND TAB SETTINGS AS EASY AS ON A TYPEWRITER
No other word-processing system of any size makes it this easy. You can even adjust both left and right margins on-screen.

THE SCREEN SHOWS YOU WHAT YOU'RE GETTING
You don't have to wait until it's printed. You see margins, line breaks, underlines, page breaks, etc., as they will appear.

JUSTIFIED, OR RAGGED-RIGHT
And see it on the screen the way it'll appear when it's printed.

ANY NUMBER OF FORMATS IN A SINGLE DOCUMENT
Order different margins, tabs, line-spacing—anything—for any section of a document.

HEADERS AND FOOTERS OF ANY LENGTH
The document name, page number, or other information is printed automatically at the top or bottom of any page, or every other page, or wherever.

PRINT ANY PAGE IN THE FILE
You don't have to print a whole document. Just punch in the page number.

HARD PAGE BREAK
Lets you tell the system where you want pages to break.

HARD AND SOFT SPACES AND HYPHENS
You can tell the program which words must go together on the same line, which words must be hyphenated.

WIDOWS AND ORPHANS
The system automatically breaks pages to avoid leaving unsightly single lines or partial paragraphs at the bottom or top of a page—unless you want them there.

FRACTIONAL LINE SPACING
1 1/2-line spacing is as easy to order on Leading Edge Word Processing as on a typewriter.

TEXT THAT'S WIDER THAN THE SCREEN
Horizontal scrolling allows you to create documents up to 200 characters wide.

THINGS THAT MAKE IT PROFESSIONAL

ONE-KEY CUT AND PASTE
Lets you move pieces of text around like matchsticks with far fewer key-strokes than other systems.

ONE-KEY CENTERING
And the line (or block of type) stays centered even when you change it.

AUTOMATIC REFORMATTING
You don't have to clean up a paragraph after you edit it. Leading Edge Word Processing does it for you.

THE BEST UNDERLINE YOU CAN BUY
As easy as a typewriter. And it shows on the screen as an underline.

BIG-SYSTEM BLOCK FUNCTIONS
Leading Edge Word Processing deletes, inserts, and performs other changes on large blocks of text through the use of forward and backward highlighting.

SCRATCH PAD
Gives you "scrap paper" in the middle of a document for working on text. When you're finished, you can insert the text, discard it, or even cut it out and paste it somewhere else.

NAME DOCUMENTS THE WAY YOU WANT
No codes needed. You can call a letter to Mom "Letter to Mom."

SPLIT SCREEN/WINDOWS
This big-system feature puts two documents on the screen at the same time so you can copy from one to another.

BOLD, SUBSCRIPTS, SUPERSSCRIPTS, STRIKETHRU, AND LETTERS DOUBLE-WIDE

You get to see them on the screen, and you don't have to go through a big rigamarole to get them.

U.S. AND FOREIGN DECIMAL TABS
Automatically line up the decimal in its proper place in a column of numbers.

THINGS THAT GIVE YOU PEACE

A REAL LIVE PERSON
In the unlikely event that your system ever "crashes," or you need help with any feature or function, there's a toll-free hot-line that connects you to an expert tele-diagnostician who can give you an instant answer. 1-800-523-HELP—in Massachusetts, 617-449-6060.

AUTOMATIC SAVE
While you are editing, or creating a document, Leading Edge Word Processing automatically makes a copy every 15 seconds. So your work is saved, even if the power fails.

AUTOMATIC DOCUMENT BACKUP
Every document is automatically copied twice onto your file disk, if you choose to do so. So if an accident happens to one document, you still have a copy. (Don't worry. Your writing's not going to get lost in some electronic blackhole.)

RECALL OF DELETED TEXT
If you delete text by accident or change your mind, you can get it back.

CUSTOMER PROTECTION PLAN
Your Leading Edge Word Processing is guaranteed forever. If you should accidentally destroy it, we'll replace it at a nominal cost. Whenever we upgrade it, we'll give you an updated program at a nominal cost.



LEADING EDGE®

COMMAND OF THE LANGUAGE

It's staggering.

It can change the way you work, the way you think, the way you live.

It can help you create, re-create, and replicate.

It's for secretaries, statesmen, salespeople, students, song-writers and story-tellers.

It is more than just an incredible time-saver (although it certainly is that, too). Much, much more.

It's a tool that propels you into creativity, letting you set down an idea, rearrange it, edit it, improve it, decide you liked it better the first time, change Smith to Jones wherever Smith appears, switch paragraphs around, personalize things that ought to be personal, see how what you've written would look with different margins, in all capital letters, or with boldface headings, add or delete names or numbers from lists, file away fleeting ideas and retrieve them whenever you want them, automatically show you a "table of contents" of all your ideas in case you've forgotten them, put a notion on "hold" while you do something else, and prod you into certain secret places that your mind has seldom, if ever before, entered.

It lets you do all this on an IBM® PC on a single 5 1/4" disk. Add a hard disk, and it can contain up to two file-cabinet drawersful of information, each drawer containing up to 32 file folders, each folder containing up to 32 pieces of electronic "paper" containing anything from a single sentence to a thousand page book.

This is command of the language.

This is Leading Edge Word Processing™.



LEADING EDGE®

THINGS IN GENERAL:

In a nutshell, Leading Edge® is big word processing for the small computer.

It's the simplest, yet most powerful word processing program ever created for sophisticated Personal Computers like the IBM® (or the even more-powerful Leading Edge PC).

You can learn the basics of the system in a matter of minutes, master it in a matter of hours, and never out-grow it in a lifetime.

If you've been using another word-processing package, either you've been working too hard, or it hasn't been working hard enough.

Thanks to this program, even the most complex functions are typically reduced to just one or two keystrokes. And thanks to an impeccably logical and easy-to-reference Operator's Manual, you can quickly flip to any function you want to perform, and immediately start performing it.

So you can hunt and peck your way into the future, or (if you're already a good typist) . . . you can fly.

THINGS THAT MAKE IT SIMPLE

A MANUAL THAT'S A HELP, NOT A HINDRANCE

An elegantly logical User's Manual written by non-technical writers, tested on beginners and experts alike, with simple, intelligent illustration, examples, and instructions, tab-indexed for instant access to any word-processing function.

SIMPLE LEARNING AIDS TAILORED TO YOUR ABILITY

Learning is easy—and actually fun—at every level, beginning with a Beginners' Guidebook and an interactive training disk that gives you on-screen instructions and holds your hand as it walks you through the basics step by step. After that, there's a "shorthand" cue card and keyboard overlay that refresh your memory at a glance. Most people start to do basic word-processing in less than one hour.

THE MOST HELPFUL "HELP" KEY YOU'LL EVER PRESS.

Gives you exactly the information you want, whenever you want it.

CLEAR, HELPFUL MENUS

Type two keys, and your screen gives you a "table of contents"—to let you "call-up" anything you've written, so you can revise it, update it, discard it, or print it.

BYPASS THE MENU

The menus are there if you want them. If you don't, fly nonstop to what you want using the menu bypass.

SIMPLE COMMANDS

Simple one- and two-keystroke commands mean you have no complicated codes to memorize.

LOGICAL DESIGN

So logical that when you know how one thing works, you know how a dozen other things work.

DESIGNED SPECIFICALLY FOR THE IBM OR LEADING EDGE PC KEYBOARD AND COMPUTER

To take advantage of all the power these PC's are capable of, with the greatest amount of simplicity.

THINGS THAT MAKE IT FAST

THE FASTEST CURSOR MOVES IN WORD PROCESSING

More moves with fewer keystrokes than any other system at any price. You can instantly move to the next character, next word, next sentence, the next line, the next page, or to the end of an entire document.

GO TO ANY PAGE INSTANTLY

Just tell Leading Edge Word Processing what page you want, and you get it.

"DO IT" KEY MAKES BIG CHANGES WITH ONE KEYSTROKE

The simplest, fastest way to insert, delete, and move big blocks of text. (This is the "execute," or "plus" key on the IBM or Leading Edge PC.)

CHANGE A FORMAT IN SECONDS

Without leaving page or letter or memo or other document you're working on, you can see how it would look with different margins, indented, or in all capital letters; or with boldface headings, etc.

BLOCK INDENT

You don't have to hit the tab key on every line to create a temporary margin. (Great for columns of figures, sub-paragraphs, outlines, etc.)

DIRECT-DIAL DOCUMENTS FROM THE DIRECTORY

Just highlight the document you want (using the cursor keys), and you'll get it simply by hitting the execute key.

HOT PRINT

Print any portion of a document, from one line to an entire document.

DOT LEADER TAB

Useful for things like tables of contents.

TRANSPOSE KEY

Corrects the most common mistake in typing: One stroke turns "teh" into "the".

IBM is a registered trademark of International Business Machines Corporation.



You bought a computer to cultivate your kids' minds. Make sure it's bearing fruit, not growing vegetables.

Introducing a whole crop of Learning Adventure games from Spinnaker.

When it comes to cultivating adventurous young minds, the computer's potential is endless.

Unfortunately, the search for software that makes the most of that potential has been endless, too.

That is, until Spinnaker created the Learning Adventure Series. A unique collection of games that reward curiosity with

hours of adventure and learning. So the time kids spend with our games will help them develop valuable skills. Instead of just tired thumbs.

But what really makes our Learning Adventure games unique—educational value aside—is how much fun they are. Which isn't too surprising when you consider you can do things like bargain with aliens, search a haunted house, or build your own railroad empire.

In fact, our games are so much fun, kids will really enjoy developing some very important skills. Deductive reasoning, note taking, and problem solving, for instance.

So, if you're in the market for software that will truly cultivate young minds, pick the Spinnaker Learning Adventure Series.

It's the best way to be sure your search will be fruitful.

Spinnaker Learning Adventure games are available for Apple,® Atari,® IBM® and Commodore 64™ home computers.



It's New! TRAINS.™

You're in charge of an old-time railroad—and whether it turns into a bonanza or a bust depends on how well you run it. But either way you'll find that working on this railroad is a challenge—and a lot of fun! **Ages 10-Adult.**



It's New! ADVENTURE CREATOR.™

Design a challenging adventure game that you or a friend can tackle—or let the computer design one for you. It's complex, exciting—utterly addictive! **Ages 12-Adult.**



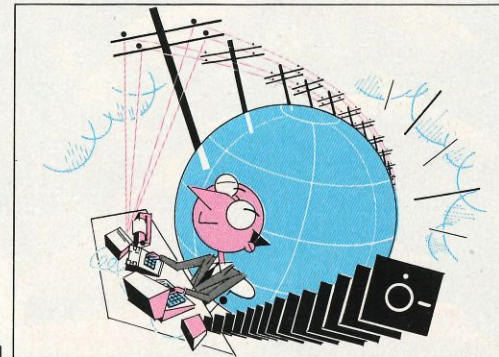
IN SEARCH OF THE MOST AMAZING THING.™

It isn't easy to find—even in your B-liner. But you'll have help from your Uncle Smoke Bailey as you search the universe to find the Most Amazing Thing. **Ages 10-Adult.**

SPINNAKER™
We make learning fun.

Disks for: Apple, Atari, IBM, and Commodore 64.
Cartridges for: Atari and Commodore 64—
(ADVENTURE CREATOR only).

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NEW RELEASES 11

This month, 126 new software packages were released. We list them all according to category (Productivity, Performance, Learning and Leisure) and we give a brief description of the main features of each one.

TOP 20..... 45

A critical evaluation of the 20 best software packages. Each program was carefully selected by our board of editors from the 126 new software packages released this month.

TEST DRIVES 75

An in-depth tour through the most significant programs which are currently on the market. Our editors show you in words and pictures what those packages are like to use. This month's features: Dollars & Sense, Millionaire, PC-Talk, R:base 4000 and WordStar.

BUYER'S GUIDE 121

A complete explanation, in layman's terms, of everything you'll need to know to make the right purchase of software to fit your communications needs. Comparison tables give you features, prices and system requirements for over 100 products.

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This month's 20 best software releases as photographed by Roberto Brosan.

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The future belongs to those who can type

You finally have a computer. Now your life is state-of-the-art and you're ready for the future. But you've got a problem. And you don't even know it.

You need to learn to type. You see, your computer may work at the speed of lightning, but information travels at the speed of typing. To use your computer effectively and productively, you must type.

The Typing Tutor III™ program by Kriya Systems,™ Inc. is the best and most enjoyable way to learn how. This incredibly effective program teaches you touch typing on your own equipment.

The Typing Tutor III program understands you. It personalizes itself to your abilities and progress, just as a teacher would, and teaches you at a speed that feels comfortable for you.

Typing Tutor III program senses the areas where you may need more work and modifies lessons accordingly.

HELP is available on-screen anytime during the program and an 800 service number is ready to answer your call should you need more help.

And when you need a break, the Typing Tutor III program provides you with Letter Invaders,™ an enjoyable typing game that lets you have some fun and still keep improving your speed skills.

In no time at all, the Typing Tutor III program will get all ten fingers into action, which is eight fingers better than before.

The Typing Tutor III program is available for the IBM PC and compatibles, Apple II/II+/Ile and Commodore 64. Other versions will be available soon, including ones for CP/M-based machines and the Apple Macintosh. You'll find the Typing Tutor III program in computer and book stores, or wherever software is sold. Suggested list price is \$49.95.

Typing is your access to your computer—and that's your access to the future.

BY KRIYA SYSTEMS,™ INC.
SIMON & SCHUSTER

Typing Tutor III™

The fastest, most effective way to learn how to type on your computer. Now with LETTER INVADERS,™ the arcade game that sharpens your typing skills.



PERSONAL SOFTWARE

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EDITORIAL

As you've probably noticed, we are a bit different this month. We've changed the look of the magazine, starting with a new cover, to give you a better presentation of the information you've been telling us you want.

Some of you may not realize that between 100 and 200 new software packages are introduced *each month*. Our goal is to sort that all out for you and pick the best of the lot. We do this through a tough selection process by our top editors. We send them out to find what new software is coming and then pick the 20 best programs out of all the packages scheduled for introduction that month. Our staffers give each of those 20 a tough evaluation, telling you the good points and the bad. Our objective is to fairly report our findings so that if you buy one of these programs there are no surprises. We'll report to you on how difficult the program is to learn and how difficult or easy it is to use once you've learned it. We'll tell you how good the documentation is and whether the program will run on your computer.

We'll give you a listing, with brief descriptions, of *all* the new programs being released each month. You are sure to see programs here before your local dealer has them or even knows about them, so be patient. Just in case, we'll provide you with the name and address of the manufacturer of each of these new programs. Those products will be sorted by category, whether they are aimed at increasing your Productivity or Performance, or intended for Learning or Leisure. We'll tell you which programs are the best sellers each month in each of those same categories.

Then we'll take you on "test drives" of selected—and significant—programs. Some will be packages that have been around, such as WordStar in this issue. These "test drives" are to show you, in great depth, what it is really like to use the program. After reading these, you'll feel as though you've seen a complete demonstration of the package in a store.

In each issue there is a Buyer's Guide, an in-depth look at a specific category of software. Our goal here is to provide enough information for you to make an intelligent purchase in that category of software. We will tell you what you should watch for—and watch out for—in these programs. In this issue, we deal with communications software, the programs you need to connect your computer to the outside world. We explain the jargon for those of you who don't understand it and we explore the subject from the point of view of helping you determine whether it's time for you to dive into a particular area; communications, in this issue's case. We give you charts listing all the brands and models available and the various features of each. You can use these charts as your checklist in determining which model is best for you.

We have made these changes in presentation in response to letters and comments we have received from you, our readers. Feel free to tell us what you think of the new look. We *do* listen.

Finally, let me repeat the promise our publisher made to you in our first issue last November: We won't forget you and what you face in finding the best software packages on the market. Our promise to you is simple: We are going to do everything in our power to help you choose the software you need. The best and only the best!

Charles L. Martin

IBM PC Software: the value of choosing programs that fit.



Shoes.

If they don't fit, they're not worth wearing.

Software programs.

If they don't fit, they're not worth using.

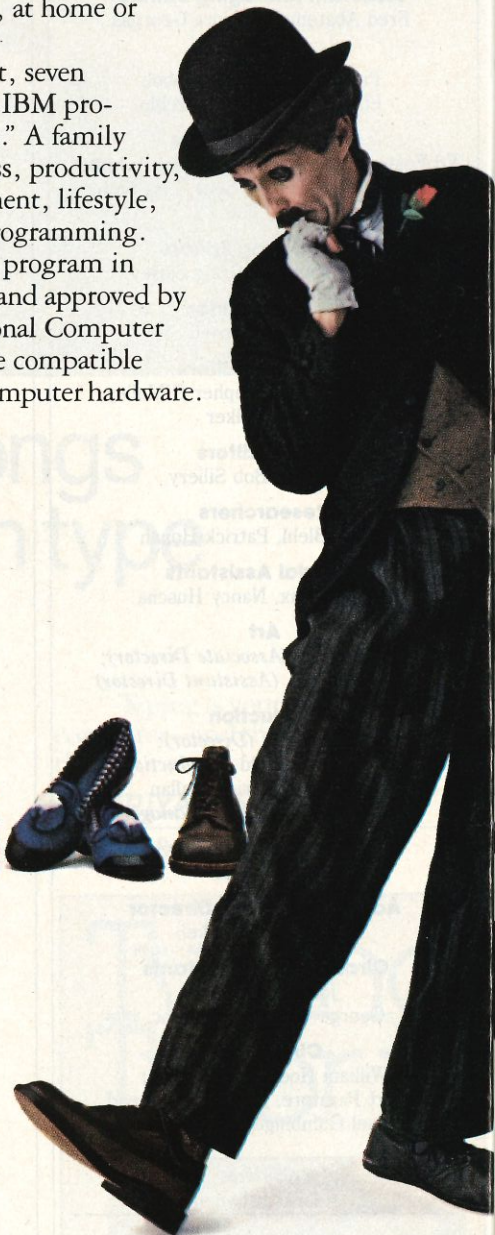
That's why it's altogether fitting that IBM Personal Computer Software offers you a choice.

Size up the selection.

You'll find many types of programs in the IBM software library. They'll help keep you on your toes in the office, at home or in school.

There are, in fact, seven different categories of IBM programs called "families." A family of software for business, productivity, education, entertainment, lifestyle, communications or programming.

Of course, every program in every family is tested and approved by IBM. And IBM Personal Computer Software is made to be compatible with IBM Personal Computer hardware.



Putting your best foot forward.

Although every person isn't on equal footing when it comes to using personal computer software, there's something for almost everyone in the IBM software library.

For example, you may be on a shoestring budget and want a big selection of programs with small price tags.

You may be introducing students to computing and want programs that are simple to use and simple to learn.

You may run a business requiring sophisticated inventory and payroll programs. Or you may run a business requiring a single accounting program.

You may write interoffice memos and want a streamlined word processing program. Or you may be a novelist looking for a program with features worth writing home about.

Now you can find IBM Personal Computer Software that fits — to help you accomplish specific tasks and reach individual goals.

Stroll into a store today.

What's the next step?

Visit an authorized IBM Personal Computer dealer or IBM Product Center near you. To find out exactly where, call 800-447-4700. In Alaska or Hawaii, 800-447-0890.

Ask your dealer to demonstrate your choice of programs. Then get comfortable. Sit down at the keyboard and try IBM software on for size.



Personal Computer Software

THE TRUTH ABOUT SOFTWARE.

*If you are an IBM PC user,
or are about to become one,
be careful!*

All software is not created equal.

Many programs promoted as "user-friendly" are anything but friendly. Their manuals are poorly written and confusing. Their commands are cumbersome and hard to remember. And, if you make a little mistake—*Poof!*—your work can suddenly disappear.

You really don't have to suffer with such frustrating software. For every application, there are a few good programs that can make your life a lot easier and increase your productivity.

Why then are so many troublesome programs being sold every day to new users?

Mainly because of the lack of reliable information. People recommending programs have good intentions, but even dealers and experts have had experience with only a limited number of programs.

They may recommend the best program they know, but not necessarily the best one available.

THERE IS A BETTER WAY.

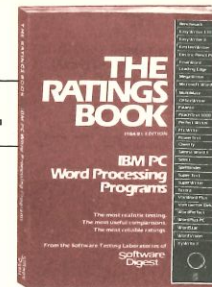
If you could, you'd thoroughly test all the competing programs for yourself. And when you were finished, you'd really know the score.

But that would cost thousands of dollars and take months of your time.

Or you can do it the easy way.

Get THE RATINGS BOOK. And you'll have the answers right at your fingertips.

THE TRUTH ABOUT SOFTWARE.



Software Digest, Inc.
One Wynnewood Road
Wynnewood, PA 19096

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- ☐ IBM PC Database & File Management Programs
- ☐ IBM PC Spreadsheet Programs (May)*
- ☐ IBM PC Graphics Programs (June)*
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2. Ease of Learning
3. Ease of Use
4. Error Handling
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6. Versatility
7. Overall Evaluation
8. Value for Money

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TO GET THE MOST OUT OF YOUR COMPUTER.

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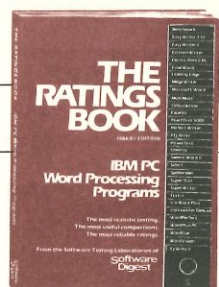
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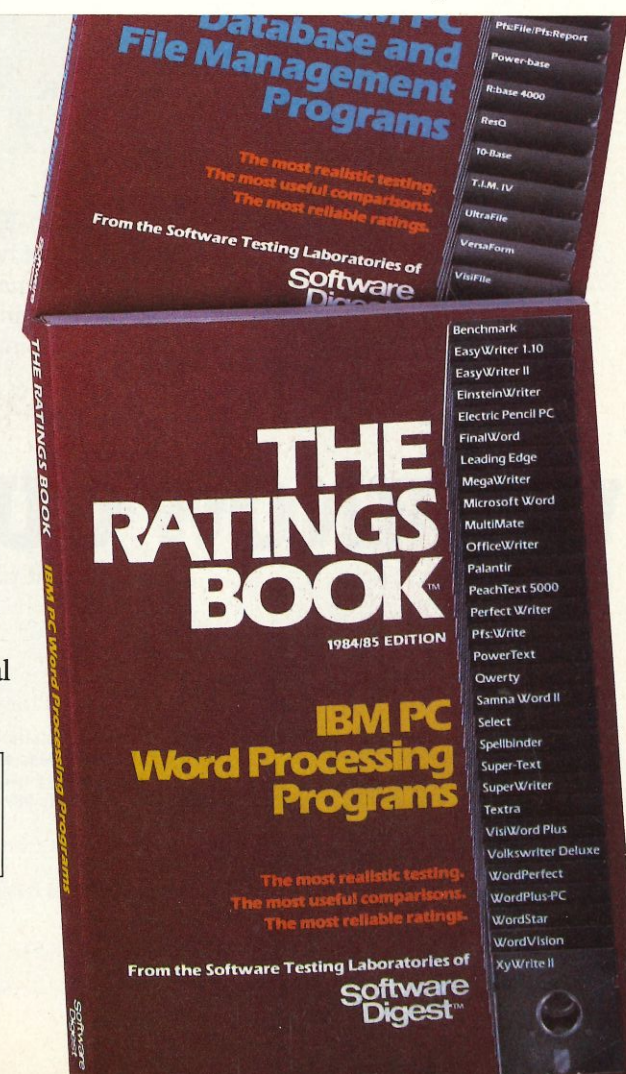
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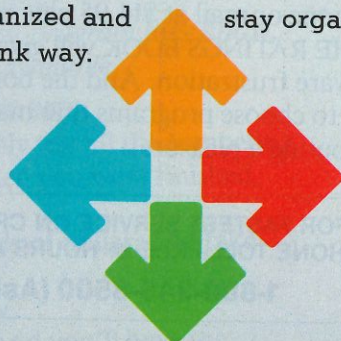
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NEW RELEASES

THIS IS the complete listing of all 126 new programs released this month. The Top 20, as selected by the editors of *Personal Software*, are highlighted throughout the listings. Also included are a brief description of each program and the name and address of the company that makes it.

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NEW RELEASES/INDEX

Programs are listed alphabetically by the personal computer on which they run and by software category. Programs that run on more than one personal computer are listed more than once.

KEY

Productivity
Performance
Learning
Leisure

Apple II/III Series

- Aladin
- Astro-Aid
- Bar Mitzvah
- Compu-Tutor
- C'est La Vie
- Coast-To-Coast America
- Computer Literacy Modules
- Computer Preparation For the SAT
- Decision Aide
- Diascriptive Reading I
- Dinosaurs
- Dinosaur Dig
- Early Childhood Learning Program
- Exact Dimensions!
- EZ Logo
- Famous Names in Software Games
- 50 Defense Vs. Run First Encounters
- The Friendly Computer
- Friends or Lovers
- Games For Girls
- Gold Letters
- LAN: Mail Monitor
- Lucky's Magic Hat
- Managing For Success: People Management
- Managing For Success: Personal Development
- Mastering The College Board Achievement Tests: English
- Matchmaker II
- Micro Cookbook
- Multi-RAM
- Nutshell Information Manager
- Owlcat
- The People's Choice
- The Profit Center
- Programmer PCjr
- Protracs
- Quiz
- R:base 2000
- Savvy PC
- Select Bilingual
- Sign-Plot
- Smart Link
- Softplot/BGL
- Teacher PCjr
- ThinkTank
- Thor
- Timebound
- Visuall
- Webster: The Word Game

Apple 32-Bit System Family

- ATI Training Programs

IBM (PC-DOS)

- Accounting Pearl
- Aladin
- APL*Plus/PC
- ASAP Five
- Astro-Aid
- ATI Training Programs
- The Benchmark
- The Calculator
- Coast-To-Coast America
- Checkbase
- Controller III
- CSC Business Series
- Dinosaur Dig
- EasyWriter I
- Ernie's Magic Shapes
- Filecomp
- General Management Series
- Gold Letters

- The Impersonator
- In-Search
- LAN: Mail Monitor
- Leading Edge Learning Series
- MAI/Basic Four
- Managing For Success: People Management
- Managing For Success: Personal Development
- Mastering The College Board Achievement Tests: English
- Mastering The SAT
- Maxi Accountant
- Micro Cookbook
- Multi-RAM
- Nutshell Information Manager
- Owlcat
- The People's Choice
- The Profit Center
- Programmer PCjr
- Protracs
- Quiz
- R:base 2000
- Savvy PC
- Select Bilingual
- Sign-Plot
- Smart Link
- Softplot/BGL
- Teacher PCjr
- ThinkTank
- Thor
- Timebound
- Visuall
- Webster: The Word Game

MS-DOS

- Aladin
- APL*Plus/PC
- ASAP Five
- Astro-Aid
- ATI Training Programs
- The Benchmark
- CSC Business Series
- Decision Aide
- EasyWriter I
- Filecomp
- General Management Series
- Gold Letters
- In-Search
- LAN: Mail Monitor
- MAI/Basic Four

- Matchmaker II
- Maxi Accountant
- Multi-RAM
- Nutshell Information Manager
- Poly-COM
- Popgen
- Popgro
- Printer Basher
- The Profit Center
- R:base 2000
- Softplot/BGL

Radio Shack TRS-80

- Assembly Language Development System
- Basrum
- Diascriptive Reading I
- Gold Letters
- Investment Analysis
- LapLog
- MatchMaker II
- Mr. Dig
- Perplexity
- Popgen
- Popgro
- PowerTool
- Quiz
- Sorcerer of Claymorgue Castle
- Spectaculator

Atari

- Agent USA
- Bannercatch
- Bar Mitzvah
- Compu-Tutor
- C'est La Vie
- Chatterbee
- Coco Notes
- Ernie's Magic Shapes
- MatchMaker II
- Math Mileage
- Monkey Series
- MovieMaker
- Sea Horse Hide 'N Seek
- Seven Cities Of Gold
- Sorcerer of Claymorgue Castle
- Success With Math Series
- Timebound
- Weather Tamers
- Webster: The Word Game

CP/M

- Aladin
- APSGraph
- The Benchmark
- CSC Business Series
- Gold Letters
- GraphPlan-86
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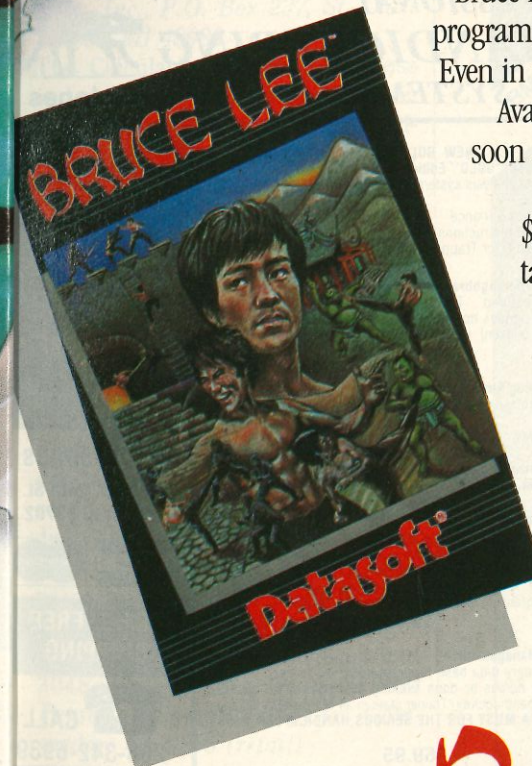
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within the program include Data, Report, Query, Calculation, Word Processing Bridge, Grouping, and Statistics. *Runs on Apple II series (64k and two drives) or III (hard disk and 256k); IBM Personal Computer and XT (192k and two drives or hard disk); Corvus Concept; Sage II and IV; DEC Rainbow series; Victor 9000; TI Professional; Altos 586. \$595 (Apple II series), \$795 (all others) (retail or direct order)*

Review, page 50.

APL+PLUS/PC FINANCIAL AND STATISTICAL LIBRARY STSC, Inc., Software Publishing Group, 2115 E. Jefferson St., Rockville, MD 20852; (301) 984-5000

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Quality disks deserve a quality sleeve. Sleeves of TYVEK* spunbonded olefin provide unsurpassed data protection because

1. TYVEK is strong—won't tear like paper.
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 3. TYVEK is smooth, non-abrasive.
 4. TYVEK is chemically clean, has a neutral pH.
 5. TYVEK reduces static problems.
 6. TYVEK is unaffected by water.
- Take the first step to maximum disk data protection. Call 800-44 TYVEK for the names of manufacturers who rely on sleeves of TYVEK.

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*Manufacturer's suggested retail

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ROCKY MOUNTAIN SOFTWARE SYSTEMS
1280-C NEWELL AVE., SUITE 1047; WALNUT CREEK, CA 94596

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The Business series programs include Business Ledger, Business Receivables, Business Sales Order Entry, Business Customer (customer information management), Business Payables, Business Sales Manager, and Business TimeCard (time accounting). Each of the programs features completely on-screen instruction. *Runs on CP/M and MS-DOS systems. \$595 each (retail)*

DOCUMAX Signum Microsystems, 120 Mountain Ave., Bloomfield, CT 06002; (203) 726-1911

An information management system, Documax is designed for those who want to manage word processing, electronic mail, and other files of textual information. The program accesses, stores, and organizes documents, and can search through a file at a rate of 15,000 words per minute. *Runs on Apple II series. \$175 (retail or direct order)*

Review, page 51.



EXACT DIMENSIONS! Aspen Incharge Corp., Box 3203, Aspen, CO 81611; (303) 925-3734

Aimed at persons who work frequently with common dimensions, Exact Dimensions! is designed to calculate tedious and/or time consuming measurements to help take the drudgery out of dimension tasks. *Runs on Apple II series, III. \$79.95 (direct order)*

GENERAL MANAGEMENT SERIES

DacormFG Software Systems, 13330 Bishop Rd., Box 269, Bowling Green, OH 43402; (419) 354-3981
Designed to help manufacturing people involved with general management responsibilities, The General Management series includes PartPlan, a product/items/parts system; EnergyPlan, a utilities data and fore-

casting program; TrendPlan, a forecasting system; ScrapPlan, for scrap reports and defect analysis; EquipPlan, for equipment inventory control and costing; UpkeepPlan, a machinery and equipment data system; WorkPlan, a department performance measure; PlantPlan, a building and grounds system; PricePlan, a pricing, coding, and analysis system; and CostPlan, a data history and forecasting program. *Runs on MS-DOS systems. \$150 each (retail or direct order)*

GOLD LETTERS Data Base Industries, 330 W. Felicita Ave., Suite D-6, Escondido, CA 92025; (619) 480-9616
Gold Letters, which includes the Gold Writer word processing program, contains 101 business form letters that cover 12 categories of business correspondence. *Runs on Apple II series, all TRS-80 models, CP/M systems, and MS-DOS systems. \$159 (direct order)*

GRAPHPLAN-86 Digital Equipment Corp., 200 Baker Ave., Concord, MA 01742

An integrated graphics and spreadsheet program, GraphPlan-86 is designed to help financial professionals with activities such as budget forecasts and what-if analyses for businesses of all sizes. A single keystroke flips between the spreadsheet and graphic display. *Runs on Rainbow 100, 100+ with graphics option module and 128k. \$295 (retail or direct order)*

THE IMPERSONATOR Direct Aid, Inc., P.O. Box 4420, Boulder, CO 80501; (303) 442-8080

The Impersonator is a communications package designed to emulate any asynchronous terminal and automatically "learn" network log on/off protocols. The program includes pre-configured emulations for a number of terminals; you can custom design additional emulations as well. *Runs on IBM Personal Computer with 192k and modem. \$195 (direct order)*

IN-SEARCH Menlo Corp., 4633 Old Ironsides Dr., Suite 400, Santa Clara, CA 95050; (408) 986-0200
In-Search lets you gain access to the

more than 200 electronic public-information libraries, or on-line data bases, offered by Dialog Information Services. Once connected to the data base, the program guides you through information searches with on-screen graphics, Help commands, and built-in data base descriptions. *Runs on TI Professional, IBM Personal Computer. \$399 (retail)*

Review, page 47.



LAN: MAIL MONITOR Software Connections, 2041 Mission College Blvd., Santa Clara, CA 95054; (408) 988-0300

An electronic mail package designed for local area networks, LAN: Mail Monitor is a store and forward mail system that can be used as an internal message system and a file transfer system that can send data over the phone lines. Two versions of the program are available: one for up to 25 users on each network and the other for up to 10,000 users. *Runs on Apple II series, IBM Personal Computer, Corvus Concept, Compaq, Eagle PC, TI Professional. \$745 (standard), \$1195 (large network) (retail or direct order)*

LAPLOG PocketInfo Corp., 7795 S.W. 184 St., Beaverton, OR 97007; (503) 649-8145

Designed to give the TRS-80 Model 100 memory buffer capabilities, LapLog is a cassette-based program that lets you scroll through all data sent or received during an on-line, interactive communication session with a host computer. You can review the data even during information transmission or reception, with the amount of data limited only by the computer's memory. *Runs on TRS-80 Model 100. \$39.95 (retail or direct order)*

MAGICINDEX Computer EdiType Systems, 509 Cathedral Parkway 10A, New York, NY 10025; (212) 222-8148

MagicIndex processes and prints out indices and tables of content in true proportional spacing. Index entries can be marked in the text itself without having to retype the entries apart from the main text, and entries can be automatically converted to upper- or lowercase. The package includes the features of the MagicPrint and MagicBind programs. *Runs on CP/M systems with Diablo 630/1650-compatible printer or NEC Spinwriter. \$295 (retail or direct order)*

MAI/BASIC FOUR MAI/Basic Four Business Products Corp., 601 San Pedro N.E., Albuquerque, NM 87108; (505) 266-5811

An adaption of the accounting software originally developed for the Basic Four minicomputers, MAI/Basic Four is a series of integrated accounting packages that includes 11 application programs: general ledger, accounts payable, accounts receivable, inventory, payroll, order entry, purchase orders, sales analysis, financial statements, fixed assets, and report writer. *Runs on IBM Personal Computer, XT. \$395 to \$595 (retail)*

MAXI ACCOUNTANT The Business Division, Scott Adams, Inc., Box 3435, 155 Sabal Palm Dr., Longwood, FL 32750; (305) 862-6917
Incorporating 13 integrated modules, Maxi Accountant is designed to be a complete business accounting system. The package is sold as one unit. *Runs on IBM Personal Computer, XT. \$795 (retail)*

MULTI-RAM Softsmith Corp., 1431 Doolittle Dr., San Leandro, CA 94577; (415) 487-5900

Multi-RAM is designed to offer the power of integrated software with the software you already own and use. Information from most spreadsheets, files, word processors, accounting programs, and data bases can be exchanged with the integrating capability of the Multi-RAM package. *Runs on IBM Personal Computer. \$99 (retail)*

DYSAN® protects disks in sleeves of TYVEK.



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Quality disks deserve a quality sleeve. Sleeves of TYVEK® spunbonded olefin provide unsurpassed data protection because

1. TYVEK is strong—won't tear like paper.
2. TYVEK does not lint.
3. TYVEK is smooth, non-abrasive.
4. TYVEK is chemically clean, has a neutral pH.
5. TYVEK reduces static problems.
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Take the first step to maximum disk data protection. Call 800-44 TYVEK for the names of manufacturers who rely on sleeves of TYVEK.

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Used by elementary schools, universities, planetariums, and observatories worldwide.



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TellStar is your personal guide to the stars helping you discover the excitement of astronomy; whether you're 6 or 60. You will see, locate, and identify constellations, stars, planets, and other stellar objects with graphic displays.

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*Level I One Star Table	\$ 49.95	\$39.95
*Level II Three Detailed Star Tables Including All Of The Fascinating 'Messier' Objects	99.95	79.95
*Level III IBM PC's Equipped With An 8087 NDP	129.95	n/a

Add \$3.00 shipping and handling charges. CO residents include additional 6.15% sales tax. VISA and Mastercard accepted with signed order. International sales: please write. Dealer inquiries invited.

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COMING UP IN THE JULY ISSUE

CHOOSING A WORD PROCESSING PACKAGE

There are a great many word processing programs out there—how do you choose? Next month's buyer's guide to word processing software will lend you a hand.

Because our new Micro Cookbook makes it easier than ever for you to bake, broil, roast and fry 'em. Not only by giving you more than 150 recipes—which it does. But by simplifying the whole art of cooking. You see, Micro Cookbook eliminates messy, confusing recipe files. Instead you simply insert our program into your computer and select any recipe your heart, or stomach, desires. Ask for a recipe by name, ingredients or category.

The recipe you select can be one of the mouth-watering dishes we include—or you can create a diskette of your own favorites. And you can constantly modify your selections, adding new triumphs and removing recipes that, ah, bomb.

These, and Micro Cookbook's other features, will make your life in the kitchen a breeze.

With this in mind, is it any wonder Micro Cookbook makes this guy so nervous?

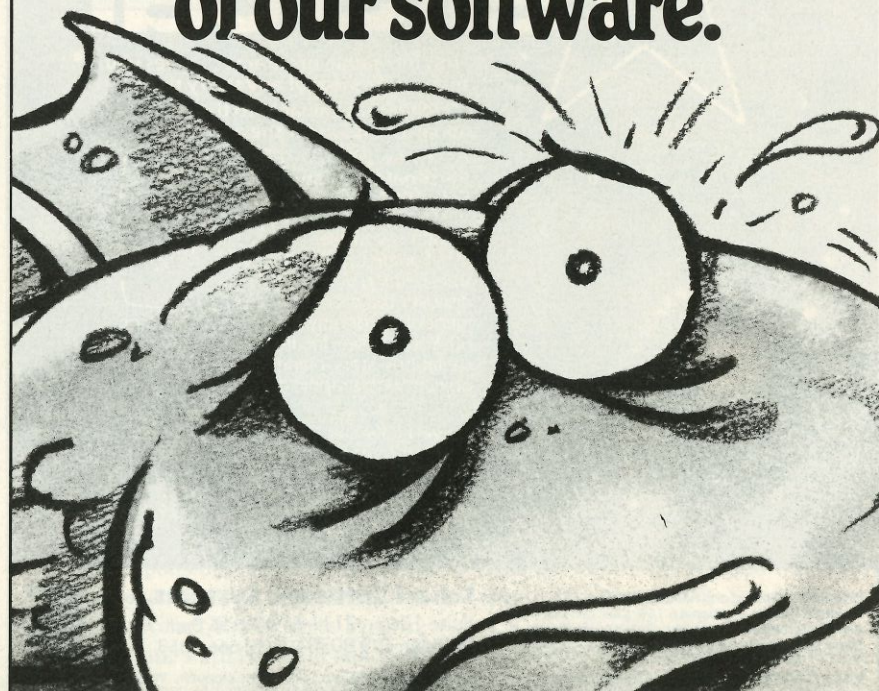
Versions available for Apple II+, IIe (80 col) and IBM PC (64K, PC DOS). The cost \$40. Advanced Functions Package (requires Micro Cookbook) for IBM PC (128K, PC DOS or MS DOS) and Apple II+, IIe (64K, 80 col). The cost \$30. Soups & Salads, Appetizers, or Dessert options, \$12 each. Check your dealer first. MC/VISA check, phone or mail order accepted. Please specify computer and add \$2 handling.

APPLE, IBM and MS DOS are registered trademarks of Apple Computer, Inc., IBM Corporation, and Microsoft, Inc., respectively.

VIRTUAL COMBINATICS

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NEW RELEASES

NUTSHELL INFORMATION MANAGER

Leading Edge Products, Inc., 225 Turnpike St., Canton, MA 02021; (800) 343-6833

Designed to be an information management package that bridges the gap between simple filing programs and complex data base management systems, the Nutshell Information Manager is a menu-driven program that features virtually unlimited data fields, word indexing, imbedded prefix matching, reformatting word wrap, and customized reports with summaries. A learning disk is also included. *Runs on IBM Personal Computer.* \$395 (retail)

Review, page 48.



OPER 8 Selkirk Computing Systems, 17131 Hofer Ct., Lake Oswego, OR 97034; (503) 241-8448

Oper8 is designed to provide operations management personnel with purchasing, sales order, and inventory management systems. The purchasing and sales order programs can also be purchased separately. *Runs on CP/M systems with hard disk and 132-column printer.* \$2250 (direct order)

POLY.COM Digital Equipment Corp., 200 Baker Ave., Concord, MA 01742; (800) DIG-ITAL (344-4825)

A communications package, Poly.COM combines terminal emulation and file transfer functions. The package allows interactive communications and transmissions of ASCII text files while emulating a variety of Digital and other ASCII terminals. *Runs on MS-DOS or CP/M systems.* \$200 (retail)

POWERTOOL Radio Shack/Tandy Corp., 1800 One Tandy Center

Fort Worth, TX 76102; (817) 390-3154

PowerTool allows you to directly examine and modify disks in any of several versions of TRS-DOS and LDOS, to restore many unreadable disks to readable condition, and to format and backup all or part of a disk. Familiarity with the disk operating systems is assumed. *Runs on TRS-80 Models I, III, 4, or 4P.* \$49.95 (retail)

PRINTER BASHER Speer Research Corp., Connecticut Software Division, 30 Wilson Ave., Rowayton, CT 06853; (203) 838-1844

A printer utility program, Printer Basher is designed to provide menu-based operation of all control functions and print modes for all Epson printers. *Runs on IBM Personal Computer, XT; Apple IIe; Compaq; Epson QX-10.* \$59.95 (retail or direct order)

THE PROFIT CENTER Prentice-Hall, Inc., 200 Old Tappan Rd., Old Tappan, NJ 07657; (201) 592-2640

The Profit Center (TPC) is a series of integrated business applications programs that can be used alone or in combination with other programs in the TPC family with the Master Menu program. The series includes nine accounting programs, three word processing programs, two data base management programs, and six titles for planning and analysis. *Runs on IBM Personal Computer with 128k and two disk drives.* \$75 to \$695 (retail and direct order)

PROTRACTS Applied Microsystems, Inc., P.O. Box 832, Roswell, GA 30077; (404) 475-0832

Designed to track tasks over time by either responsibility or priority, Protracts is aimed at corporate analysts and project leaders. The program lets you track up to 100 separate projects containing up to 100 tasks each which can be sorted by any field for custom reports. *Runs on IBM Personal Computer, XT or PCjr with 128k.* \$59.95 (retail or direct order)

XDRAW American Small Business Computers, Inc., 118 S. Mill St., Pryor, OK 74361

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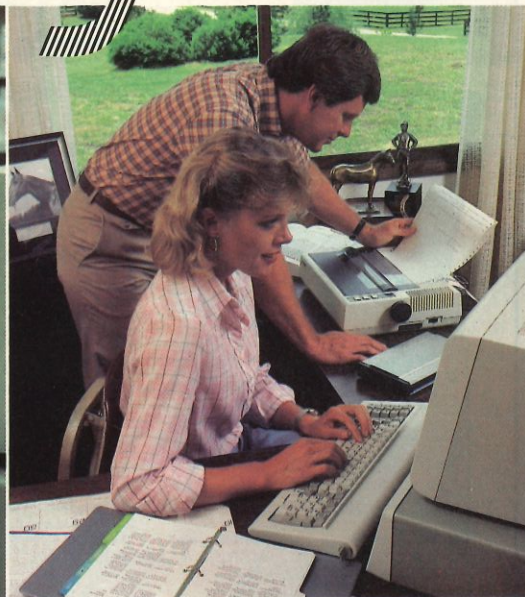
*Trademarks: PC-DOS (IBM), MS-DOS (Microsoft), CP/M (Digital Research, Inc.)

Hayes

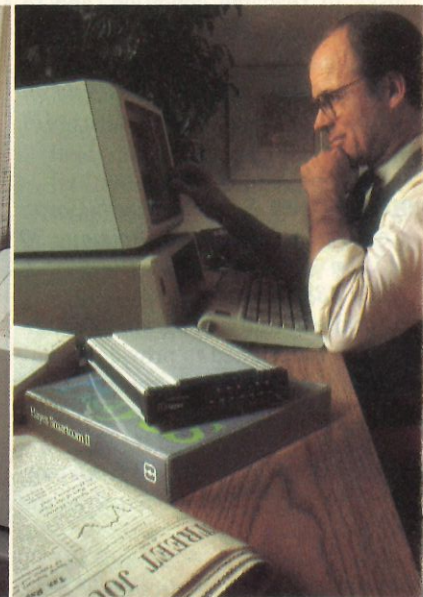
Your computer's telephone.



What are the adverse effects of this compound?



Gary: The pedigrees for next week's auction are as follows...



Sold 1000 shares at 33 for net profit of 6000. Richard.

Wouldn't it be great if you could use your IBM* PC to tap into vast resource libraries across the country? To transfer files to your partner, upstate? Or from your broker, down the street?

It's possible. All you need is a modem, to connect your computer to others. Down the hall. Or thousands of miles away.



Hayes Smartmodem. Think of it as your computer's telephone. Hayes Smartmodem 300™ and the faster Smartmodem 1200™ allow you to communicate over ordinary phone lines.

But any modem will send and receive data. Hayes Smartmodems

also dial, answer and disconnect calls. Automatically. And without going through the telephone receiver, making them far superior to acoustic coupler modems.

Choose your speed; choose your price. The lower-priced Smartmodem 300 is ideal for local data swaps and communicates at 300 bps. For longer distance and larger volumes, Smartmodem 1200 operates at baud rates of 300 or 1200, with a built-in selector that automatically detects transmission speeds.

Both work with rotary dials, Touch-Tone® and key-set systems; connect to most time-sharing systems; and feature an audio speaker.

Smartmodem 1200B™ is also available as a plug-in board. Developed specifically for the PC, it comes packaged with Hayes' own communications software, Smartcom II™.

Smartcom II. We spent a lot of time developing it, so you can spend less time using it. Smartcom II prompts you in the

simple steps required to create, send, receive, display, list, name and rename files. It even receives data completely unattended—especially helpful when you're sending work from home to the office, or vice versa.

If you need it, there's always "help." This feature explains prompts, messages, etc. to make communicating extra easy.

With Smartcom II, it is. Case in point. Before you communicate with another system, you need to "set up" your computer to match the way the remote system transmits data. With Smartcom II, you do this only once. After that, parameters for 25 different remote systems are stored in a directory on Smartcom II.

Calling or answering a system listed in the directory requires just a few quick keystrokes.

You can store lengthy log-on sequences the same way. Press one key, and Smartcom II automatically connects you to a utility or information service.



Hayes

lengthy log-on sequences the same way. Press one key, and Smartcom II automatically connects you to a utility or information service.

Smartmodem 300, 1200, and 1200B are FCC approved in the U.S. and DOC approved in Canada.

Smartmodem 1200B. (Includes telephone cable. No serial card or separate power source is needed.)



Smartcom II communications software.

NOTE: Smartmodem 1200B may also be installed in the IBM Personal Computer XT or the Expansion Unit. In those units, another board installed in the slot to the immediate right of the Smartmodem 1200B may not clear the modem; also, the brackets may not fit properly. If this occurs, the slot to the right of the modem should be left empty.

And, in addition to the IBM PC, Smartcom II is also available for the IBM Personal Computer XT, COMPAQ Portable, Corona Portable PC, Columbia MPC, DEC Rainbow 100, Xerox 820-II, and Kaypro II personal computers.*

Backed by the experience and reputation of Hayes. A solid leader in the microcomputer industry, Hayes provides excellent documentation for all products. A limited two-year warranty on all hardware. And full support from us to your dealer.

So see him today. Break out of isolation. Get a telephone for your Personal Computer. From Hayes.

Hayes Microcomputer Products, Inc., 5923 Peachtree Industrial Blvd., Norcross, GA 30092. 404/441-1617.

NEW RELEASES

A graphics design tool, QXDraw lets you draw figures, charts, schematics, and blueprints, and retrieve them at any position or size on the screen. In addition to drawing lines and text, the program can draw circles, curves, and ovals, and can merge screen images. *Runs on Epson QX-10. \$119.95 (retail or direct order)*

SELECT BILINGUAL: THE SPANISH/ENGLISH WORD PROCESSOR Select Information Systems, 919 Sir Francis Drake Blvd., Kentfield, CA 94904; (415) 459-4003. Primarily for business and government agencies needing to produce written communications in both English and Spanish, Select Bilingual can use either language as a starting point for creating documents. Menus, Help screens, and commands are in both languages. *Runs on IBM Personal Computer, Compaq. \$395 (retail)*

SIGN-PLOT Centerpoint Computer Applications, 500 N. Michigan Ave., Chicago, IL 60611; (312) 467-0333.

Sign-Plot is a plotter program that allows you to produce six different letter font styles for creating word charts with upper- and lowercase, punctuation, and numbers as part of the font program. Vertical and horizontal positioning of the text in fractional inch increments ensures exact size and location of the lettering. *Runs on IBM Personal Computer with 128k and two drives, CP/M-80 systems. \$149 (retail or direct order)*

SMART LINK Software International Corp., General Electric Software Products Co., 1 Tech Dr., Andover, MA 01810; (617) 685-1400.

Smart Link is a financial applications micro-to-mainframe link that works with many popular spreadsheet programs like Lotus 1-2-3, VisiCalc, and Multiplan. The package is designed to let you perform many of the same operations (such as data input and report production) from your personal computer that are normally completed with a mainframe terminal. *Runs on IBM Personal Computer, XT with serial card. \$2995 (direct order)*



SOFTPLOT/BGL Mosaic Software, Inc., 1972 Massachusetts Ave., Cambridge, MA 02140; (617) 491-2434. Softplot/BGL is a device-independent graphics extension system that lets you create custom graphics applications in BASIC. The program features two-dimensional viewing with windows and 3D plotting. *Runs on CP/M (M-BASIC) and MS-DOS (BASICA or GWBASIC) systems. \$99 (retail or direct order)*

SPEED FILE Bluebush, Inc., 3379 St. Mary's Pl., Santa Clara, CA 95051; (408) 244-1631.

A free-form filing package, Speed File is designed to file, sort, and organize information while requiring no special entry format or access codes. *Runs on Apple II Plus, IIe. \$125 (retail)*

VISUALL Trillian Computer Corp., 15425 Los Gatos Blvd., Los Gatos, CA 95035; (408) 358-2761.

Designed to let you use your computer and popular application programs easily, Visuall is an operating environment that uses windows with plain-English task names to eliminate the need for memorizing commands. Application "shells" are currently available for WordStar and Lotus 1-2-3. *Runs on IBM Personal Computer, XT. \$99.95, \$49.95 each for application shells (retail or direct order)*

Review, page 49.

PERFORMANCE

ASSEMBLY LANGUAGE DEVELOPMENT SYSTEM Radio Shack/Tandy Corp., 1800 One Tandy Center, Fort Worth, TX 76102; (817) 390-3154. A tool for developing Z-80 programs, Assembly Language Development

We have CP/M® for Radio Shack computers.

2,000 new programs for your TRS-80® 12.

CP/M is the runaway leader in disk operating systems, but until now owners of Radio Shack computers have been locked out of the thousands of useful programs that operate on CP/M.

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Use any printer.

Instead of being chained to Radio Shack hardware, you'll be able to add a video terminal, any printer (serial or parallel) and several Winchester hard disk drives with storage up to 80 megabytes.

Uses only 8.5K of memory.

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Besides the standard Digital Research CP/M manual, you'll get the 250-page manual we've developed through our long experience in adapting CP/M to Radio Shack computers. Our manual has lots of examples and an index and glossary.

You'll have your first working disk in ten minutes.

Only \$200.

The floppy disk version of Pickles & Trout CP/M is \$200. The hard disk versions (for Tandy, Corvus, and Cameo) are \$250, except for the multi-user Cameo, which is \$400.

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TRS-80® Radio Shack/Tandy Corporation. CP/M® Digital Research.
Pickles & Trout® Pickles & Trout. ©1983 Pickles & Trout

NEW RELEASES

opment System contains a text editor for writing and editing source programs, an assembler for converting source programs to Z-80 object code, a linker for connecting program sections into object files, a file transfer system, and a debugger. *Runs on TRS-80 Models III, 4, and 4P. \$149 (retail)*

BASRUM Wiley, Inc., 841 Bishop St., Suite B-2, Honolulu, HI 96813 (808) 531-4314

Basrum is a development tool for BASIC programmers that allows subroutines to be stored in "library" files, separate from the main program itself. These files can then be used by any BASIC program. *Runs on TRS-80 Models I and III. \$149.50 (direct order)*

CHECKBASE International Microcomputer Software, Inc., 633 Fifth Ave., San Rafael, CA 94901; (415) 454-7101

A personal finance program, Checkbase can maintain up to 90 different accounts with an unlimited number of accounts per month. The package can prepare simple ledgers and inventory accounts, perform multiple transactions, and print checks. *Runs on IBM Personal Computer. \$95 (retail or direct order)*

DECISION AIDE Kepner-Tregoe, Inc., P.O. Box 704, Princeton, NJ 08542 (609) 921-2806

Designed to provide "a road map for decisions and greater objectivity, Decision Aide is aimed at guiding the executive through the critical steps in decision-making. The program is based on a systematic decision making process. *Runs on Apple IIe, IBM Personal Computer, Compaq Hyperion, and Columbia. \$250 (direct order)*

EASYWRITER I Information Unlimited Software, Inc., 2401 Marinship Way, Sausalito, CA 94965; (415) 331-6700

Targeted for personal use, Easy Writer I integrates word processing, spelling checker, and mail merge functions. The program is designed to produce relatively short documents such as form letters or short reports. *Runs on IBM Personal*

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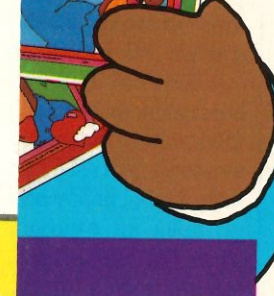
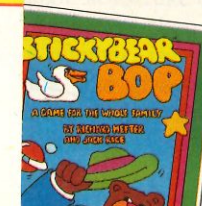
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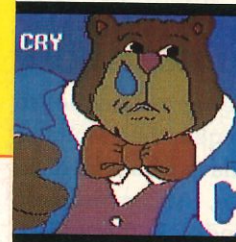
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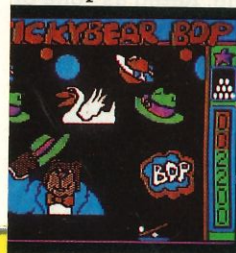
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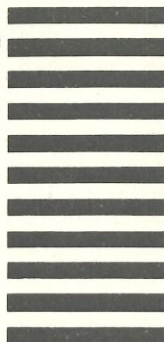
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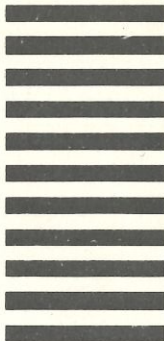
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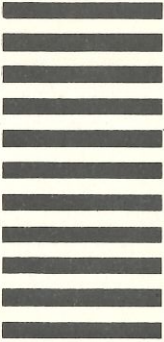
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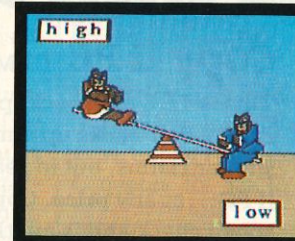
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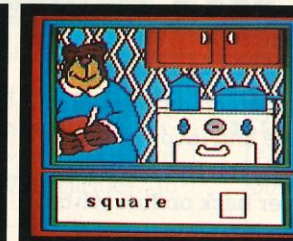


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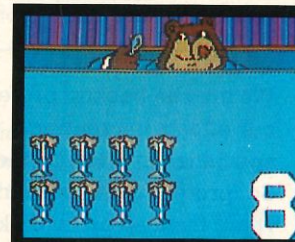
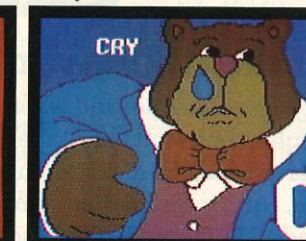
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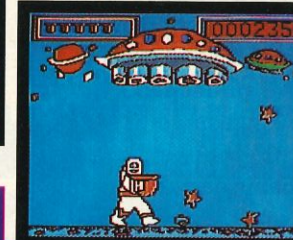
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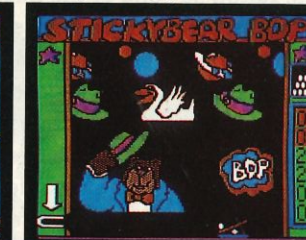
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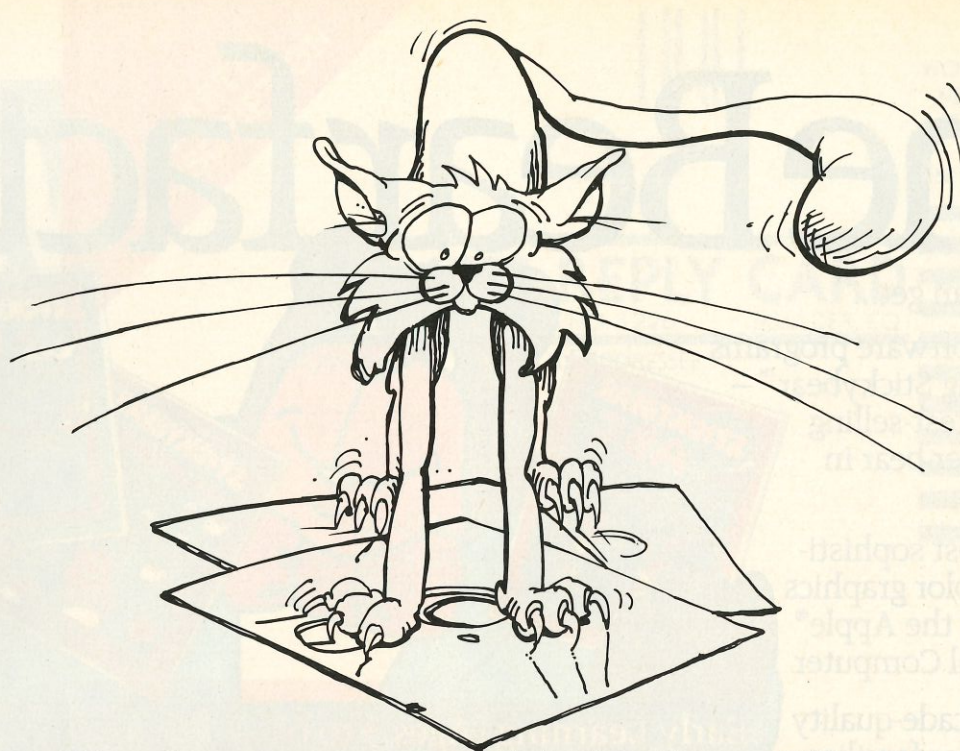
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NEW RELEASES

Computer, XT, PCjr; Compaq; TI Professional. \$250 (retail)

LECOMP Cobrasoft, 13543 Hawthorne Blvd., Suite 203, Hawthorne, CA 90250; (213) 644-1135

For use by advanced BASIC programmers and other configuration specialists, Filecomp compares files and documents software changes. The utility program performs a line-by-line scan of program files and identifies any differences between the two. *Runs on IBM Personal Computer, XT, PCjr with printer.* \$99 (direct order)

THE HOME ORGANIZER Batteries Included, 186 Queen St. West, Toronto, Ont., Canada M5V 1Z1; (416) 596-1405

Tailored for record-keeping in the home, The Home Organizer is a series of programs that lets you sort through files, search specific items, and even produce statistical calculations. The series includes modules for stamps, recipes, addresses, mailing lists, personal banking, music and book libraries, home photo and movie collections, and household inventory. *Runs on Commodore 64.* \$39.95 each (direct order)

INVESTMENT ANALYSIS Radio Shack/Tandy Corp., 1800 One Tandy Center, Fort Worth, TX 76102; (817) 390-3154

Investment Analysis consists of three separate programs for investors: Fixed Income Security Evaluator for buying or selling fixed income securities; Commission Calculator for figuring commission charges for stock and option transactions; and Option Strategy Evaluator for calculating the results of option transactions. *Runs on TRS-80 Model 100.* \$69.95 (retail)

MANAGING FOR SUCCESS: PEOPLE MANAGEMENT CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

Through self-paced instruction and exploration of case studies, users become better and more effective managers of people, in both individual and group situations. Beginning with an examination of leadership styles and strategies, users learn how to

motivate others to achieve desired results and how to build and evaluate effective teams for business and personal goals. *Runs on IBM Personal Computer, PCjr; Apple II series.* \$79.95 (retail or direct order)

MARKET LINK Smith Micro Software, Inc., P.O. Box 604, Sunset Beach, CA 90742; (714) 964-0412.



Market Link automatically logs on to the Dow Jones/News Retrieval Service to get and store on disk current quotes for up to 27 securities. In

addition, the program lets you manually log onto Dow Jones or The Source with a single-keystroke command. Market Link will then dial the local access number, issue the proper commands and give you a password and subscriber number. *Runs on IBM Personal Computer; \$59.95 (retail).*

Review, page 54.

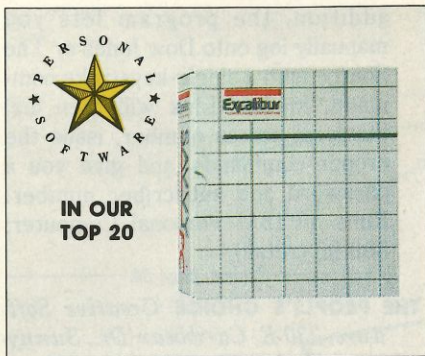
THE PEOPLE'S CHOICE Creative Software, 230 E. Caribbean Dr., Sunnyvale, CA 94089; (408) 745-1655

The People's Choice is an integrated series of three personal productivity programs: Creative Writer; Creative Filer; and Creative Calc. Each program is designed to be used by older children and adults for word processing, filing, and financial planning/forecasting, respectively. *Runs on Commodore 64; IBM Personal Computer, PCjr.* \$49.95 each (retail)

R:BASE 2000 Microrim, Inc., 1750 112th Ave. N.E., Bellevue, WA 98004; (206) 453-6017

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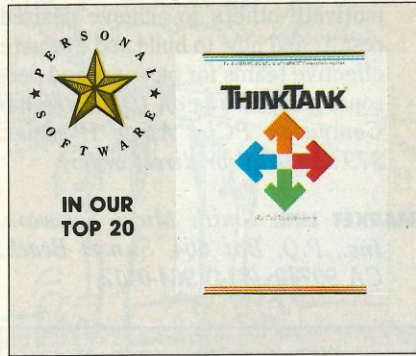


A data base system designed for personal use, R:base 2000 features a conversational language inquiry option allowing you to query the program in your own language rather than in codes. The program can also generate detailed reports. *Runs on IBM Personal Computer, XT; Compaq; Hyperion; Columbia; Corona PC; Victor 9000; HP 150; DEC Rainbow 100; TI Professional.* \$295 (retail)

SAVVY PC Excalibur Technologies Corp., 800 Rio Grande Blvd. N.W., Albuquerque, NM 87104; (505) 242-3333
Savvy PC is a personal language development system designed to let you create and manage data base applications. *Runs on IBM Personal Computer, XT.* \$395 (retail)
—Review, page 56.

SPECTACULATOR Radio Shack/Tandy Corp., 1800 One Tandy Center, Fort Worth, TX 76102; (817) 390-3154
This cassette-based spreadsheet program automatically calculates and displays computed values, and also answers what-if questions. Possible uses include forecasting, statistics, and math homework. *Runs on TRS-80 Models I, III, and 4.* \$49.95 (retail)

THINKTANK Living Videotext, Inc., 1000 Elwell Ct., Suite 232, Palo Alto, CA 94303; (415) 964-6300
An "idea processor," this new version of ThinkTank is designed to help you organize your strategies, plans, and ideas by brainstorming through presentations and using simple commands. *Runs on Apple II series, III; IBM Personal Computer.* \$150 Apple, \$195 IBM (retail)
—Review, page 53.

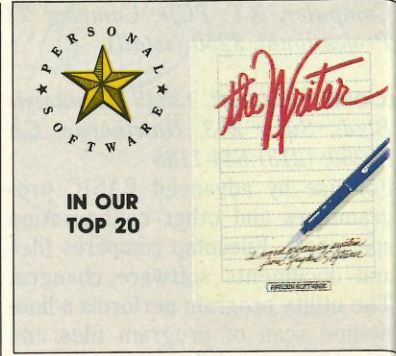


THOR Fastware, Inc., 200 Freeway Dr. East, East Orange, NJ 07018; (201) 676-7963

The THought ORganizer, and idea organizer and outliner, lets you enter and recapture ideas by category, date, or key word. *Runs on IBM Personal Computer, XT with 128k.* \$295 (retail or direct order)
—Review, page 57.

WORK FORCE II Core Concepts, P.O. Box 24157, Tempe, AZ 85282; (602) 968-3756

This collection of six programs for home or office includes The Balancing Act (for your checkbook), The Calculator, The Loan Analyzer, The Savings Analyzer, The Wage Analyzer, and The Line Writer. All six are packaged together. *Runs on Apple II series.* \$29.95 (direct order)



THE WRITER Hayden Software Co., Suffolk St., Lowell, MA 01853; (617) 937-0200

A junior version of the popular PIE:Writer word processing program, The Writer features editing, formatting, and configure modes. A partial screen of the program's editing commands also appears at the top of the screen while you work in the edit mode. *Runs on Apple II series.* \$59.95 (retail or direct order)
—Review, page 55.

LEARNING

AGENT USA Scholastic, Inc., 730 Broadway, New York, NY 10003; (212) 505-3000

Designed to help children learn geography, Agent USA is an educational adventure game set in the train stations of 100 different U.S. cities. *Runs on Atari 800 with joystick.* \$29.95 (retail)
—Review, page 60.

ATI TRAINING PROGRAMS American Training International, Inc., 12638 Beatrice St., Los Angeles, CA 90066; (213) 823-1129

The three new training programs in the ATI series are: How to Use Your Computer, How to Use Your IBM PCjr, and How to Use Your Apple Macintosh. Each program takes the user through the basics in step-by-step fashion—from plugging in the machine to solving complex problems. *Runs on Apple Macintosh, Compaq, IBM PCjr.* \$45 each (retail)

BANNERCATCH Scholastic, Inc., 730 Broadway, New York, NY 10003; (212) 505-3000

Bannercatch is designed to encourage children to work as a team

in order to break the code and capture the flag of a team of computer-controlled robots. *Runs on Atari 800 with two joysticks.* \$29.95 (retail)

BAR MITZVAH COMPU-TUTOR Davka Corp., 845 N. Michigan Ave., Suite 843, Chicago, IL 60611; (800) 621-8227

Designed to offer personalized Bar Mitzvah instruction via the computer, Bar Mitzvah Compu-Tutor allows the student to progress at his own pace and even plays Haftarah melodies complete with bouncing ball. *Runs on Apple II Plus, IIe; all Atari models.* \$49.95 (retail)

CHATTERBEE Tronix Publishing, Inc., 8295 S. La Cienega Blvd., Inglewood, CA 90301; (213) 215-0529

An interactive spelling program with synthesized speech, Chatterbee is designed to teach spelling to students of all ages. The program has a dictionary of 2500 words. *Runs on all Atari models, Commodore 64.* \$39.95 (retail)

COMPUTER LITERACY MODULES Minnesota Educational Computing Consortium, 3490 Lexington Ave. North, St. Paul, MN 55112; (612) 481-3520

A computer literacy series for the Apple, Computer Literacy Modules consists of 15 modules for use in grades 6 through 9. The modules are targeted to four subject areas: computer science, social studies, math, and science. *Runs on Apple II series.* \$45 (direct order)

COMPUTER PREPARATION FOR THE SAT Arco Publishing, Inc., A subsidiary of Prentice-Hall, Inc., 215 Park Ave. South, New York, NY 10003; (212) 777-6300

Helping students prepare for the Scholastic Aptitude Test (SAT) is what this package is all about. Based on Arco's SAT study manual, the package includes three course disks, a student management disk, an SAT preparation book, and an exercise booklet. *Runs on Apple II series.* \$69.95 (retail or direct order)

DIASCRPTIVE READING I Educational Activities, Inc., P.O. Box 392, Free-

port, NY 11520; (516) 223-4666
Diascriptive Reading I is a diagnostic, prescriptive reading program for younger children. The program diagnoses the reading skills of a child, then prescribes what is needed for improvement and evaluates performance at each level. *Runs on Apple II Plus, IIe; Commodore 64; TRS-80 Models III and 4.* \$295, \$245 cassette (direct order)

DINOSAURS Advanced Ideas, Inc., 2550 Ninth St., Suite 104, Berkeley, CA 94710; (415) 526-9100

Designed to teach preschoolers visual recognition skills, Dinosaurs incorporates a graphic prehistoric setting with a variety of dinosaurs that swim, fly, or romp across the screen when a correct answer is given. *Runs on Apple II series.* \$39.95 (retail or direct order)

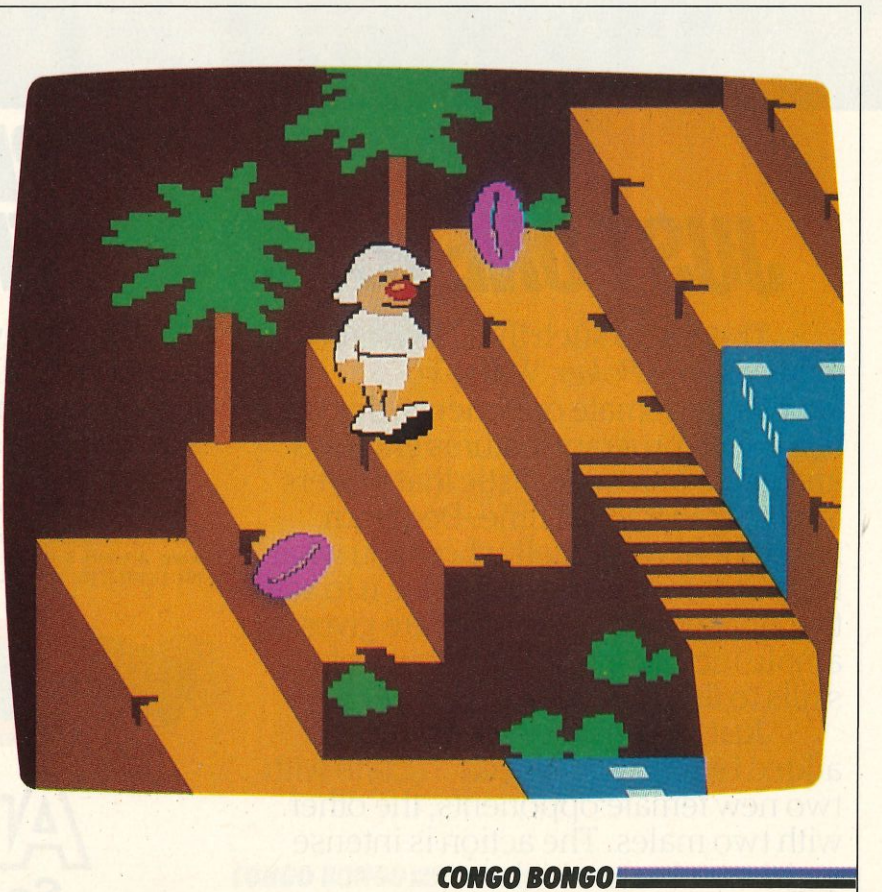
DINOSAUR DIG CBS Software, 1 Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

This program begins with an elec-

tronic journey into the past for an exploration of the huge diversity of dinosaurs—from where they lived to why they died out. Educational values include learning about dinosaurs, recalling facts and details, and science exploration and discovery. *Runs on Apple II series; IBM Personal Computer, PCjr, Commodore 64.* \$49.95 (retail or direct order)

EARLY CHILDHOOD LEARNING PROGRAM Educational Activities, Inc., P.O. Box 392, Freeport, NY 11520; (516) 223-4666

Based on the philosophy of the Logo language and the research of Jean Piaget, this program is designed to let students acquire cognitive skills in much the same way they acquire language skills. Among the skills available to the student are letter and number recognition, making judgments, color recognition, directions, decision making, classification, spelling, and others. *Runs on Apple II series, Commodore 64.* \$149 (direct order)





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NEW RELEASES

EZ LOGO Minnesota Educational Computing Consortium, 3490 Lexington Ave. North, St. Paul, MN 55112; (612) 481-3520

EZ Logo is intended to prepare children for the Apple Logo programming language with a simple set of single keystroke commands. The package includes a support manual with 24 activities. *Runs on Apple II series with Apple Logo.* \$48 (direct order)

50 DEFENSE VS. RUN Sterling Swift Publishing Co., 7901 S. IH-35, Austin, TX 78744; (512) 282-6840

Designed to help teach the fundamentals of football, 50 Defense vs. Run is the first in a series of five programs in the Computer Enhanced Football Training line. The program covers fundamental concepts of defensive play against the run, including an automated chalkboard. *Runs on Apple II Plus, IIe.* \$99.95 (direct order)

FIRST ENCOUNTERS Educational Activities, Inc., P.O. Box 392, Freeport, NY 11520; (516) 223-4666

A multimedia kit designed to help elementary school teachers conduct computer literacy classes with a limited number of computers available, First Encounters consists of card games, keyboard charts, worksheets, a lesson board, and a two-program disk which introduces programming concepts. Ten self-running "miniprograms" are also included. *Runs on Apple II Plus, IIe; Commodore 64.* \$98 (direct order)

THE FRIENDLY COMPUTER Minnesota Educational Computing Consortium, 3490 Lexington Ave. North, St. Paul, MN 55112; (612) 481-3520

Designed for primary school students, The Friendly Computer introduces them to the Apple II keyboard, computer terminology, and the capabilities of a computer system. The program uses graphics, animation, single keystrokes, and prompts to help students. *Runs on Apple II series.* \$48 (direct order)

LEADING EDGE LEARNING SERIES QED Information Sciences, Inc., QED Plaza, P.O. Box 181, Wellesley, MA 02181; (617) 237-5656



PC Plus and DOS Plus are the first two courses in the Leading Edge Learning series. PC Plus teaches the use of the IBM Personal Computer and some computing fundamentals and applications. DOS Plus teaches the essential DOS commands. *Runs on IBM Personal Computer, XT.* \$59.95 each (retail or direct order)

LUCKY'S MAGIC HAT Advanced Ideas, Inc., 2550 Ninth St., Suite 104, Berkeley, CA 94710; (415) 526-9100
An aid for developing reading comprehension, sequential thinking, and

memory skills, Lucky's Magic Hat guides you through a fantasy land of leprechauns who have scrolls containing pictures, words, and patterns for study. *Runs on Apple II series.* \$39.95 (retail or direct order)

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Cdex Corp., 5050 El Camino Real, Los Altos, CA 94022; (415) 964-7600
This program will show you how to use your spreadsheet software to make key business decisions in six vital areas of business. The complete package includes interactive tutorial diskettes, a template diskette of ready-to-use business models, and a reference guide. *Runs on Apple II series.* \$59.95 (retail or direct order)
—Review, page 59.

MASTERING THE COLLEGE BOARD ACHIEVEMENT TESTS: ENGLISH COM-

POSITION CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

This program provides review and practice in the fundamentals of stan-



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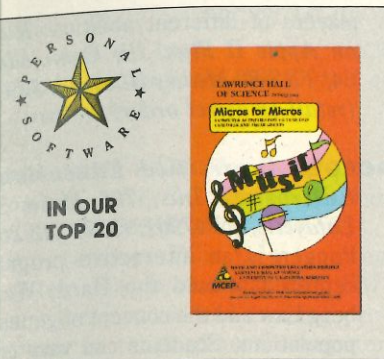
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NEW RELEASES



Micros for Micros is a series of four programs designed to provide an introduction to computers while teaching basic skills. The programs include Numbers, Estimating, Music, and Words. *Runs on Apple II series; IBM Personal Computer, PCjr.* \$175 (retail or direct order)

MASTERING THE SAT CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

This four-disk program provides practice and experience with all aspects of the verbal, math, and standard written English segments of the SAT. The program reinforces basic skills, while providing practice and strategies in test-taking, as well as immediate feedback on each problem. *Runs on Apple II series; IBM Personal Computer, PCjr; Commodore 64.* \$150 (retail or direct order)

ATCHMAKER II American Educational Computer, 2450 Embarcadero Way, Palo Alto, CA 94303; (415) 494-2021

Designed for home use, the Matchmaker II series of programs includes French Vocabulary Skills, World History Facts, U.S. History Facts, U.S. Government Facts, Biology Facts, and Elementary Science Facts. *Runs on Apple IIe, Atari 800, Commodore 64, IBM Personal Computer, TRS-80 Color Computer.* \$39.95 each (retail or direct order)

MATH MILEAGE CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

In Math Mileage, kids develop their estimation skills as they race against the clock. It also teaches addition, subtraction, multiplication, and division. *Runs on Commodore 64,*



Atari 800. \$29.95 (retail or direct order)

MICROS FOR MICROS Math and Computer Education Project, Lawrence Hall of Science, University of California, Berkeley, CA 94720; (415) 642-3167

Micros For Micros is a series of four programs designed to provide an introduction to computers while teaching basic skills. The programs include Numbers, Estimating, Music, and Words. *Runs on Apple II series.* \$34.95 each (direct order)

Review, page 63.

MONKEY SERIES Artworx Software Co., Inc., 150 N. Main St., Fairport, NY 14450; (800) 828-6573

MonkeyNews and MonkeyBuilder, both for grades 1 through 6, are the two new additions to the Monkey Series. MonkeyNews is designed to help develop reading and comprehension skills, and MonkeyBuilder combines pieces of words to form correct words. *Runs on Apple II series, all Atari models, Commodore 64.* \$29.95 each (retail)

Review, page 62.

THE NUMBER GARDEN Softsmith Corp., 1431 Doolittle Dr., San Leandro, CA 94577; (415) 430-2411

Correct answers to math problems grow brightly colored flowers in The Number Garden program. Wrong answers sprout weeds, but the student has three tries to get rid of the weed before the correct answer is provided. *Runs on Apple IIe, Commodore 64.* \$39.95 (retail)

OH, DEER! Minnesota Educational Computing Consortium, 3490



CONGO BONGO

NEW RELEASES

Lexington Ave. North, St. Paul, MN 55112; (612) 481-3520

A science and social studies simulation for grades 5 through 9, Oh, Deer! lets students experiment with wildlife population dynamics and management issues. During a five-year period, students make a series of decisions necessary to maintaining a herd size which is in balance with the natural environment and human tolerance. *Runs on Apple II series. \$44 (direct order)*

OWLCAT SAT PREPARATORY COURSE

Digital Research, P.O. Box 579, 160 Central Ave., Pacific Grove, CA 93950; (408) 649-3896

Available in 15-hour and 60-hour versions, the Owlcat packages are self-study courses designed to help college-bound high school students prepare for the Scholastic Aptitude Test. The 15-hour version consists of four disks (two verbal and two math), two manuals, and 29 lessons. The 60-hour course contains nine disks (four verbal, four math, and a

standard English test), four manuals, and 65 lessons. *Runs on IBM Personal Computer, PCjr. \$89.95 (15-hour), \$249.95 (60-hour) (retail)*

—Review, page 61.



PERPLEXITY Daybreak Software, 1951 Grand Ave., Baldwin, NY 11510; (516) 223-4666

A collection of mind-challenging programs, Perplexity encourages players to develop and use their logic and problem solving skills. The puzzles have two modes of play—regular and “contest”—to appeal to

players of different abilities. *Runs on Apple II Plus, IIe; Commodore 64; TRS-80 Models III and 4. \$29 (retail or direct order)*

POPGEN Diversified Educational Enterprises, Inc., 725 Main St., Lafayette, IN 47901; (317) 742-2690
Popgen is an interactive program centered around the Hardy-Weinberg Law and the concept of gene populations. Students can vary conditions and observe the effects of gene, genotype, and phenotype frequencies of a population over time. *Runs on TRS-80 Models I, III, and 4; Apple II series; IBM Personal Computer. \$60 (retail or direct order)*

POPGRO Diversified Educational Enterprises, Inc., 725 Main St., Lafayette, IN 47901; (317) 742-2690
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NEW RELEASES

lation. *Runs on TRS-80 Models I, III, and 4; Apple II series; IBM Personal Computer. \$60 (retail or direct order)*

PROGRAMMER PCJR Monument Computer Service, P.O. Box 603, Joshua Tree, CA 92252; (619) 365-6668
Programmer PCjr is a training system that works with the IBM-supplied manuals and training programs to teach general computer functions, use of PC-DOS 2.1, and PCjr BASIC. You can follow a structured course outline or select the lessons that interest you. *Runs on IBM PCjr with 128k. \$90 (direct order)*

QUIZ Diversified Educational Enterprises, Inc., 725 Main St., Lafayette, IN 47901; (317) 742-2690
Quiz is a test or quiz authoring system that can be used to create true/false, multiple choice, exact answer, and short answer questions. Students can take tests on the computer or from a printout. *Runs on Apple II series, IBM Personal Computer with 128k, TRS-80 Model III. \$139.95 (retail or direct order)*

QUIZIT The Regents/ALA Co., 2 Park Ave., New York, NY 10016; (212) 889-2788

For use by teachers in any subject area, Quizit is an authoring program which can be used to create quizzes or exercises. Teachers can create up to 16 exercises with as many as 25 items per exercise on a single disk. *Runs on Apple II series. \$39.95 (retail or direct order)*

SPELLDIVER Scholastic, Inc., 730 Broadway, New York, NY 10003; (212) 505-3000

Spelldiver is a word recognition game that uses a fantasy environment to help children learn how to recognize a variety of words. *Runs on Atari 800 with two joysticks. \$29.95 (retail)*

ACCESS WITH MATH SERIES CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

These comprehensive, self-paced math tutorials are designed for use by primary and secondary school students for basic skill reinforce-

ment and remedial learning. All programs in the series emphasize problem solving with positive reinforcement of mathematical skills and concepts. *Runs on Apple II series, Commodore 64, all Atari models. \$24.95 each (retail or direct order)*

TALK-U-THRU TUTORIALS Talk-U-Thru Tutorial Systems, 6519 Fountain Ave., Los Angeles, CA 90028; (213) 466-8496

Talk-U-Thru WordStar for the Apple and Talk-U-Thru Apple Writer IIe are two new audio and disk packages designed to provide instruction on using these software programs. Each package contains three cassettes, a Disk Tutor, and a reference guide. *Runs on Apple II Plus, IIe, III for WordStar; Apple IIe for Apple Writer IIe. \$49.95 each (direct order)*

TEACHER PCJR CMA Micro Computer, 55722 Santa Fe Trail, Yucca Valley, CA 92284; (619) 365-9718
A computer training program for

IBM PCjr users, The Teacher PCjr works with the manuals and programs included with the machine to teach computer operation, PC-DOS 2.1, and BASIC. *Runs on IBM PCjr with 128k. \$89.95 (retail or direct order)*

TEACHING ASSISTANT Minnesota Educational Computing Consortium, 3490 Lexington Ave. North, St. Paul, MN 55112; (612) 481-3520

Available in French and Spanish versions, this foreign language authoring package has two parts: The first part enables the teacher to design the test or quiz, and the second part lets the student review and answer the questions at the computer. *Runs on Apple II series. \$43 (direct order)*

VERNIER PHYSICS PROGRAMS Vernier Software, 2920 S.W. 89th St., Portland, OR 97225; (503) 297-5317

There are seven of these programs designed for use in introductory physics classes: Orbit II, Graphical Analysis II, Vector Addition II, Kine-



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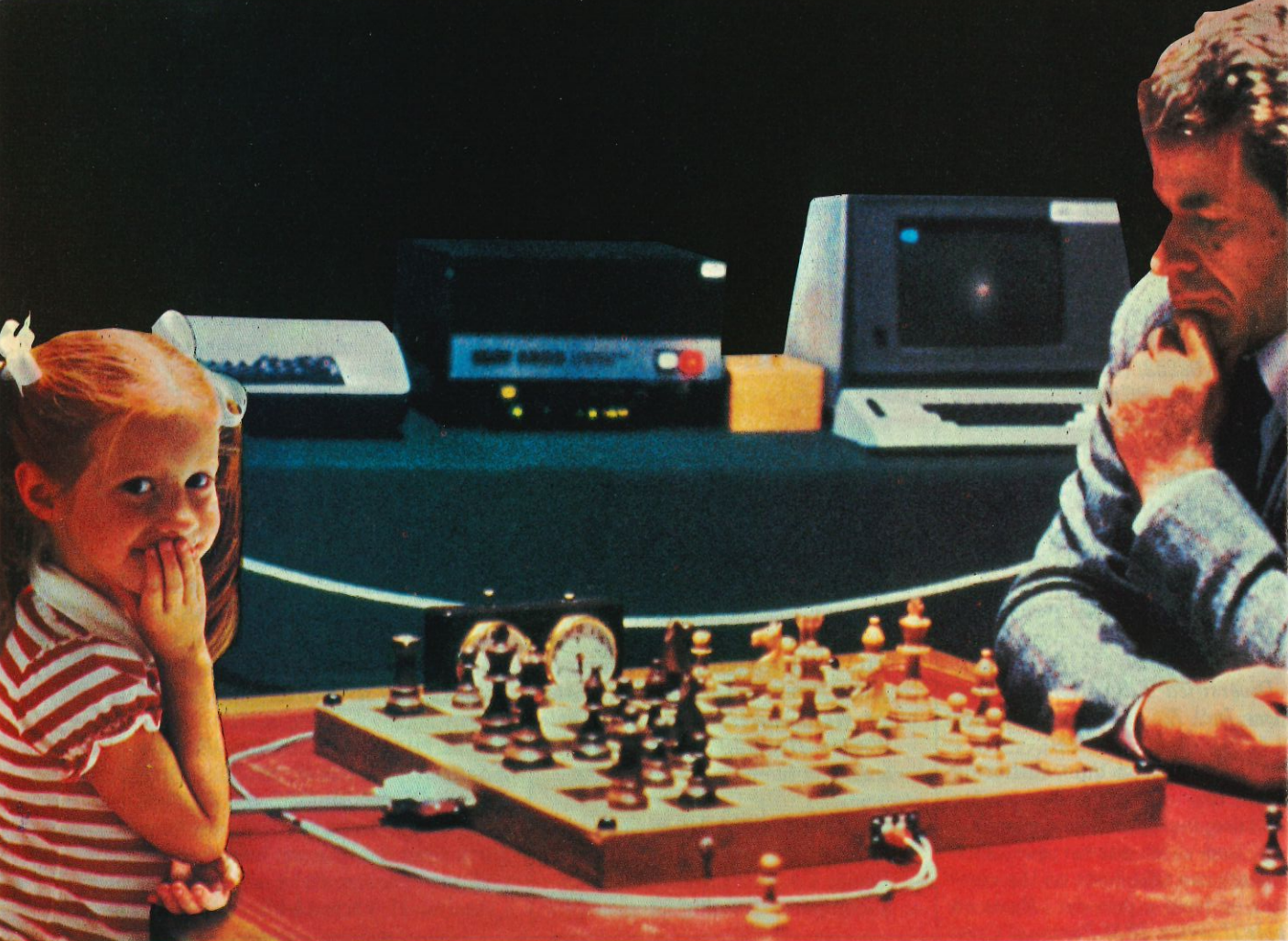
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matics II, Projectiles II, Charged Particles II, and Wave Addition II. The programs provide demonstrations, lab simulations, data analysis, and problem solving practice. *Runs on Apple II series. \$24.95 each (direct order)*

WHAT I USUALLY EAT National Dairy Council, 6300 N. River Rd., Rosemont, IL 60018; (312) 696-1020
Aimed at allowing teachers to determine if youngsters' food choices add up to a balanced diet, What I Usually Eat is for use with children in grades 3 through 6. The program asks kids what they usually eat for breakfast, lunch, supper, and snacks, and their responses are compared to the recommended number of servings from each of the basic food groups. *Runs on Apple II Plus, IIe. \$30 (direct order)*

WRITING A CHARACTER SKETCH Minnesota Educational Computing Consortium, 3490 Lexington Ave. North, St. Paul, MN 55112; (612) 481-3520

Writing a Character Sketch is a structured exploration of the elements students are to consider in writing about a historical or fictional character. Individual sets of student notes can be saved on a data disk to facilitate printing. *Runs on Apple II series. \$43 (direct order)*

WRITING A NARRATIVE Minnesota Educational Computing Consortium, 3490 Lexington Ave. North, St. Paul, MN 55112; (612) 481-3520

Designed for grades 7 through 12, Writing a Narrative features an "idea storming" program to help students get started writing, and a "catch the moments" program that guides students through plot, character, and setting to develop a narrative from their own experience. *Runs on Apple II series. \$43 (direct order)*

LEISURE

AEGEAN VOYAGE Spinnaker Software, 215 First St., Cambridge, MA 02142; (617) 868-4700

In Aegean Voyage, you are the captain of a Greek sailing vessel in search of the treasures of the gods

hidden on islands scattered throughout the waters of the Aegean Sea. Each time you sail into a rocky harbor, the Oracle will give you a clue. *Runs on Commodore 64. \$39.95 (retail)*

THE ARGOS EXPEDITION CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

A keyboard overlay transforms the computer keyboard into a spaceship console in this game designed to teach the principles of teamwork to children ages 10 and up. The game takes the form of an intergalactic voyage; the object is to gather artifacts and return home safely. *Runs on Commodore 64. \$39.95 (retail or direct order)*

ASTRO-AID Zephyr Services, 306 S. Homewood Ave., Pittsburgh, PA 15208; (412) 247-5915

An integrated package for astronomical work, Astro-Aid lets you choose from 44 astronomical functions. The program is designed for

professionals, amateurs, or students of astronomy. *Runs on Apple II series, III; IBM Personal Computer, PCjr. \$29.95 (direct order)*

C'EST LA VIE Adventure International, Scott Adams, Inc., Box 3435, 155 Sabal Palm Dr., Longwood, FL 32750; (305) 862-6917

C'est La Vie is a fantasy game in which you can pick money up off the streets and try to amass a fortune as you are pursued by tax collectors, thieves, and loan sharks. You can invest in the stock market and make bank deposits in your race for wealth. *Runs on Apple II series, all Atari models, Commodore 64. \$19.95 (retail or direct order)*

COAST-TO-COAST AMERICA CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

This game is five geography games in one: State Facts, State Quiz, Mystery State, Across The USA, and State Shoot. The games are designed to help players recall facts



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THE ROLE-PLAYING GAME OF TODAY

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and details, and learn U.S. history and geography. *Runs on Apple II series; IBM Personal Computer, PCjr; Commodore 64. \$49.95 (retail or direct order)*

COCO-NOTES CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

In this interactive musical activity for children ages 6 and up, players try to catch notes, create melodies, and fish for tunes on Coco-Note Isle. The package is designed to teach sound discrimination and musical patterns and composition. *Runs on Commodore 64, all Atari models. \$29.95 (Commodore 64 disk), \$34.95 (cartridge); \$34.95 (Atari cartridge), \$24.95 (cassette) (retail or direct order)*

DUCKS AHoy! CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

Quacking about happily in the canals of Venice, these wacky ducks rely on the players to take them from their townhouse island to the boardwalk. Players must guide their gondolas to catch the ducks before they hit the water. (Otherwise, they'll sail out of the game.) *Runs on Commodore 64. \$29.95 (retail or direct order)*

ERNE'S MAGIC SHAPES CBS Software, One Fawcett Place, Greenwich, CT 06836; (203) 622-2525

Sesame Street's Ernie helps children learn to identify shapes and colors in this interactive computer game for ages 3 through 6. *Runs on IBM PCjr, Commodore 64, all Atari models. \$39.95 (PCjr), \$32.95 (Commodore 64, Atari) (retail or direct order)*

FAMOUS NAMES IN SOFTWARE GAMES Leisure Genius, 200 Fifth Ave., Suite 311, New York, NY 10010; (212) 242-5547

Computer versions of the Scrabble, Mastermind, and Kensington board games are the first three entries in the Famous Games line. *Runs on Apple II series, Commodore 64. \$29.95 each (retail or direct order)*

FEET CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

This "foot race" presents players with their choice of 16 different feet, each with its own characteristics. By choosing the right feet and avoiding obstacles along the track, players avoid "defeat." The game is designed to teach children 8 and up cooperation, planning, and problem solving skills. *Runs on Commodore 64. \$39.95 (retail or direct order)*

FRIENDS OR LOVERS Softsmith Corp., 1431 Doolittle Dr., San Leandro, CA 94577; (415) 430-2411

Friends or Lovers is designed as a serious but entertaining tool for helping couples explore areas of their relationship. The program consists of a set of questions, written by two psychologists, from which couples can find out if they share similar opinions on a variety of topics. *Runs on Apple II series. \$29.95 (retail)*

GAMES FOR GIRLS Rhiannon Software, Addison-Wesley, General Books Division, Reading, MA 01867; (617) 944-3700

The Games For Girls series consists of four non-violent adventure games: Jenny of the Prairie, Chelsea of the South Sea Islands, Cave Girl Clair, and Lauren of the 25th Century. The theme of each game is survival, and there are many ways to play each game. *Runs on Apple II series. \$39.95 (retail)*

HALFTIME BATTLING BANDS CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

Children act as choreographers to stage their own Be-Bop Bowl halftime show, trying to trip up the opposing band while creating their own marching tunes and band formations. Three levels of play dictate the complexity of the band formation. *Runs on Commodore 64. \$29.95 (retail or direct order)*

LIGHT-WAVES CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

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SEGA

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Players continually create and re-create the three-dimensional playfield to guide their light waves to the respective goal. *Runs on Commodore 64. \$39.95 (retail or direct order)*

MICRO COOKBOOK Softsmith Corp., 1431 Doolittle Dr., San Leandro, CA 94577; (415) 487-5900

Micro Cookbook can select recipes containing specific ingredients, such as items on hand and leftovers, to take the guesswork out of turning those ingredients into a meal. The program can also convert recipes for fewer or more servings with a single keystroke. *Runs on Apple II series, IBM Personal Computer. \$40 (retail or direct order)*

MOVIEMAKER Reston Publishing Co., Inc., 11480 Sunset Hills Rd., Reston, VA 22090; (703) 437-8900 Designed to bring the art of animation to your computer, MovieMaker lets you become the director without programming ability. You devise the action, set the scene, create the actors, and play back the completed computer movie. *Runs on Apple II series; Atari 800, 1200, and XL series; Commodore 64. \$60 (retail or direct order)*

—Review, page 69.



MOVIE MUSICAL MADNESS CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

With this program children make their own movies—from casting and set design to editing and soundtracking. They become writers, composers, and directors on the set of their own Hollywood classic starring the Jazz Cats. *Runs on Commodore 64. \$29.95 (retail or direct order)*



MR. DIG Computerware, Box 668, 4403 Manchester Ave., Suite 102, Encinitas, CA 92024; (619) 436-3512 In this arcade game, you help the little wizard harvest his cherry crop by guiding him through the orchard and away from the bad hunters. *Runs on TRS-80 Color Computer. \$30.95 (retail or direct order)*

MUSICALC PROGRAMS Waveform Corp., 1912 Bonita Way, Berkeley, CA 94704; (415) 841-9866 MusiCalc 2 ScoreWriter and MusiCalc 3 Keyboard Maker are two new programs that can be used with the MusiCalc 1 package. MusiCalc 2 ScoreWriter shows users how their creations would look in standard musical notation. MusiCalc 3 Keyboard Maker is designed to transform the Qwerty keyboard into a musical one that can be played in any desired scale or melodic sequence. *Runs on Commodore 64. \$34.95 each (retail)*

NOMINATION The Brady Co., Routes 450 and 197, Bowie, MD 20715; (800) 638-0220 Nomination is a contest of political strategy that pits you against actual presidential candidates in either the Democratic or Republican contest. *Runs on IBM Personal Computer. \$29.95 (retail)*

—Review, page 67.

RANCH Spinnaker Software, 215 First St., Cambridge, MA 02142; (617) 868-4700

Ranch is a graphics program that lets 5- to 10-year olds create and animate western adventures. Once a picture has been composed, a simple joystick maneuver allows the player to animate the scene. *Runs on Commodore 64. \$39.95 (retail)*

REGATTA Howard W. Sams & Co., 4300 W. 62 St., Indianapolis, 46268; (317) 298-5400

Landlubbers get the chance sharpen their sailing skills in Regatta, a simulation of four different sailing races. The program, for one or two players, is staged at the play choice of any of four lakes. *Runs on Apple II series. \$29.95 (retail)*

—Review, page 68.

RUN FOR THE MONEY Scarborough Systems Inc., 25 N. Broadway, Tarrytown, NY 10591; (914) 332-4545

An educational business game, Run For The Money is an arcade-style adventure that challenges your business skills and strategy in an environment. *Runs on IBM Personal Computer. \$49.95 (retail)*

—Review, page 70.

SEAHORSE HIDE 'N SEEK CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

In this game designed for preschoolers, seahorses travel across a coral reef on their way to a wreck hideaway. Players learn shapes and color recognition as they avoid hazards by changing color or finding tunnels big enough to hide in. *Runs on Commodore 64, all Atari models. \$29.95 (retail or direct order)*



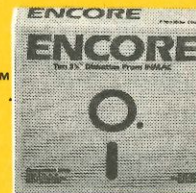
SEVEN CITIES OF GOLD Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403; (415) 571-7171

A strategy game set in 1492, Seven Cities Of Gold has players traveling the world, trading with natives, and searching for gold. *Runs on Commodore 64, all Atari models. (retail)*

—Review, page 71.

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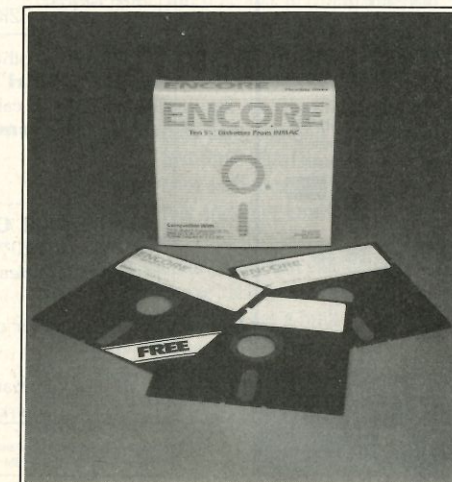
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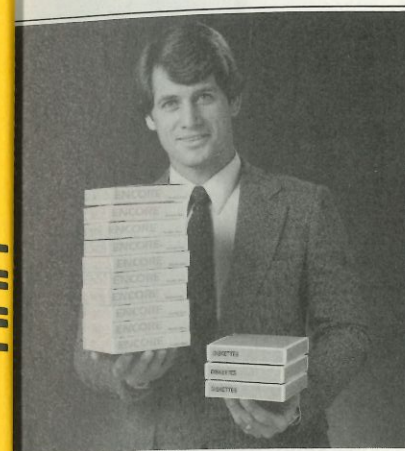
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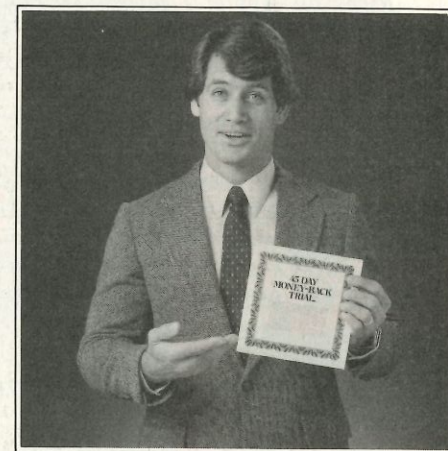
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IBM Apple Radio Shack Commodore Shack

Encore was specifically designed to provide optimum performance and reliability on the leading computer systems. Inmac's Quality Assurance Department constantly monitors all Encore diskettes to ensure they meet or exceed media specifications for these systems. Our on-going testing program guarantees that the Encore diskette you buy tomorrow will be as good as the one you buy today.



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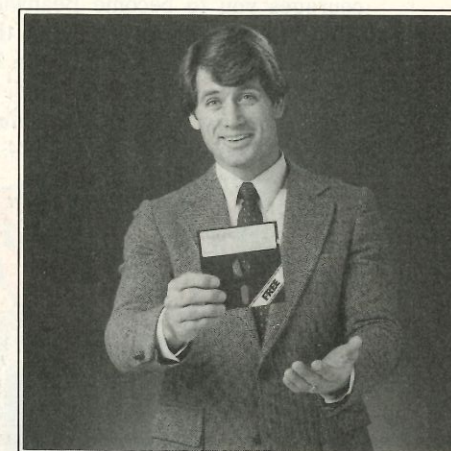
Inmac's Quality Assurance Department requires that Encore meet the media specifications for the most popular systems - Apple, Commodore, IBM, and Radio Shack - exactly. So you can rely on Encore diskettes in your system. They won't lose information or cause read/write errors.

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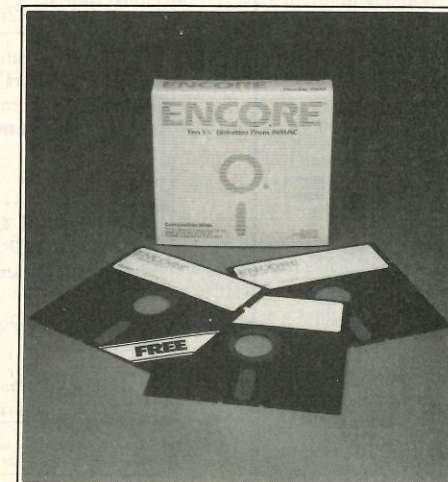
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completed computer movie. *Runs on Apple II series; Atari 800, 1200, and XL series; Commodore 64.* \$60 (retail or direct order)

Review, page 69.



MOVIE MUSICAL MADNESS CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

With this program children make their own movies—from casting and set design to editing and soundtracking. They become writers, composers, and directors on the set of their own Hollywood classic starring the Jazz Cats. *Runs on Commodore 64.* \$29.95 (retail or direct order)

ScoreWriter shows users how their creations would look in standard musical notation. MusiCalc 3 Keyboard Maker is designed to transform the Qwerty keyboard into a musical one that can be played in any desired scale or melodic sequence. *Runs on Commodore 64.* \$34.95 each (retail)

NOMINATION The Brady Co., Routes 450 and 197, Bowie, MD 20715; (800) 638-0220

Nomination is a contest of political strategy that pits you against actual presidential candidates in either the Democratic or Republican contest. *Runs on IBM Personal Computer.* \$29.95 (retail)

Review, page 67.

RANCH Spinnaker Software, 215 First St., Cambridge, MA 02142; (617) 868-4700

Ranch is a graphics program that lets 5- to 10-year olds create and animate western adventures. Once a picture has been composed, a simple joystick maneuver allows the player to animate the scene. *Runs on Commodore 64.* \$39.95 (retail)

hazards by changing color or fine-tuning the high-priced diskettes. (Only \$9 for single-sided, single-density 5 1/4" on Commodore 64, all Atari models, when you purchase 4 or more \$29.95 (retail or direct order) as ten diskettes to a box.)



SEVEN CITIES OF GOLD Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403; (415) 571-7171

A strategy game set in 1492, Seven Cities Of Gold has players travel the world, trading with natives, searching for gold. *Runs on Commodore 64, all Atari models.* (retail)

Review, page 71.

SORCERER OF CLAYMORGUE CA Adventure International, Santa Clara, CA 95051

NEW RELEASES

Adams, Inc., Box 3435, 155 Sabal Palm Dr., Longwood, FL 32750; (305) 862-6917

Following a medieval magic theme, Sorcerer of Claymorgue Castle encourages you to become Beanwick—faithful apprentice of Solon the Master Wizard—in search of the 13 “stars of power.” *Runs on Apple II series, all Atari models, Commodore 64, TRS-80 Color Computer.* \$24.95 (retail or direct order)

SPUD Howard W. Sams & Co., Inc., 4300 W. 62 St., Indianapolis, IN



46268; (317) 298-5400

An arcade-style game, Spud has two players matching wits as each tries to weaken the opposition's protective shields with an exploding spud. *Runs on Apple II series.* \$29.95 (retail)

TIMEBOUND CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

In this game, players race through 11 categories of history in search of an elusive quarry who has fallen into the player's time machine. By zipping back and forth through time and history, players use the information gained to monitor the quarry's progress. *Runs on IBM PCjr, Commodore 64.* \$31.95 (retail)

WEATHER TAMERS CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

Weather Tamers presents a computerized map of North America divided into regions. Players try to manipulate meteorological elements

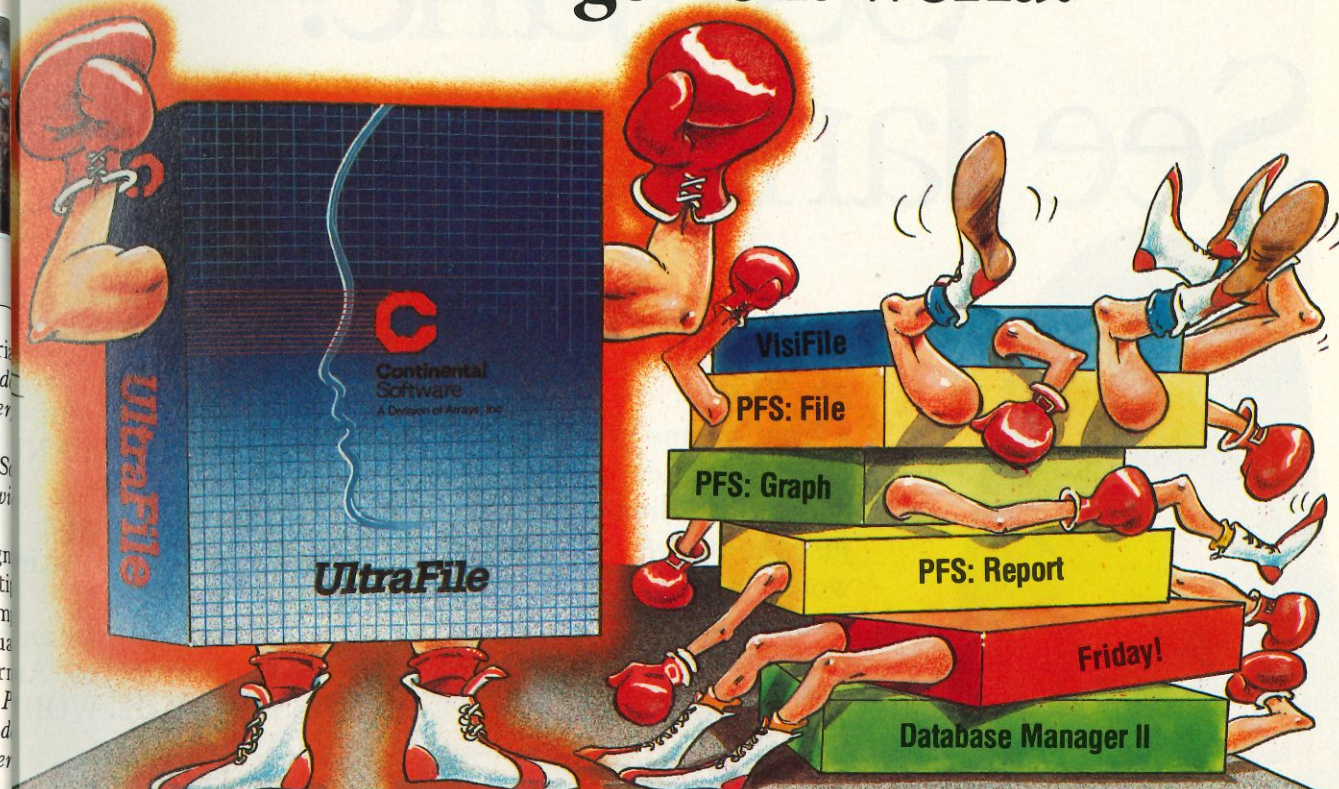


to create the weather appropriate for the region. *Runs on Commodore 64.* \$39.95 (retail or direct order)

WEBSTER: THE WORD GAME CBS Software, One Fawcett Pl., Greenwich, CT 06836; (203) 622-2525

This game helps children recognize and spell familiar words. Multiple skill levels start them off at simple one-syllable words, and gradually progress to more complex terms. *Runs on Apple II series; IBM Personal Computer, PCjr; Commodore 64.* \$29.95 (retail or direct order)

UltraFile™ -vs- The rest of the database/file management world.



	PRICE	GRAPHING CAPABILITIES	CUSTOM REPORTS	HELP SCREEN	BROWSE FEATURE	AUTOMATIC DATA FORMATTING	BUILT-IN WHAT IF FUNCTION	ON-SCREEN CALCULATIONS	DATA VERIFICATION	USER DEFINED SCREENS	MULTI-KEY WORD SEARCH
ULTRAFILE	\$195.	X	X	X	X	X	X	X	X	X	X
Friday!	\$295.		X	X		X		X	X	X	X
S: File, Graph, Rep.	\$447.	X	X							X	X
Database Manager II	\$295.		X		X			X	X		X
VisiFile	\$300.		X							X	X

When you compare features and price, there's no comparison.

The recent database/file management explosion has left you in a state of confusion, you're alone. We'd like to clear up some of that confusion.

We've taken the five most popular programs the market and run a comparison so you can for yourself exactly where they stand. And at you're getting for your money.

As you can see from the chart, dollar for dollar, feature for feature, UltraFile comes out top. Here's why:

To begin with, UltraFile has filing, reporting, graphing capabilities all in one package.

When you buy UltraFile, you automatically everything you need for creating terrific graphs, custom reports, and managing and storing your information. And you get it all for \$195. Secondly, UltraFile has a help screen.

UltraFile leads you step by step through the

program. If you need additional help or want to clarify a point, you'll be able to call up the help screen with the touch of a single key. This feature makes UltraFile incredibly easy to use.

Thirdly, UltraFile has automatic data formatting. So if you want a certain word in your text to appear in all caps, you only have to enter it that way the first time. UltraFile automatically capitalizes the word each time it appears. That means fewer errors and more consistency in your text.

UltraFile also does on-screen calculations, has a handy “browse” feature for quickly scanning your data, and has a built-in “what if?” function so you can make projections. Plus, UltraFile talks to the most popular word-processing and spreadsheet programs (1-2-3, WordStar, VisiCalc and others), which gives you greater versatility.

When you stack it up against the rest, UltraFile has the most features for the best price. It just wouldn't make sense to consider anything else.

Available for: IBM PC/XT
Price: \$195 complete.
File, Report and Graph.

For the name and location of the UltraFile dealer nearest you, or your free 64 page booklet, “Tips For Buying Software,” please write or call: Continental Software, 11223 S. Hindry Avenue, Dept. PS, Los Angeles, CA 90045, 213/410-3977.

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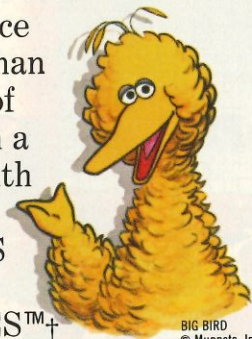
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JUNE • 1984

TOP 20

THESE ARE the best programs this month, selected by our top editors and evaluated by our staff. The software packages are broken down into four categories: Productivity, Performance, Learning and Leisure. We have chosen the best five in each category after a critical look at the 126 new programs released this month.

INSEARCH • NUTSHELL • VISUALL • ALADIN
DOCUMAX • THINKTANK • MARKET LINK
THE WRITER • SAVVY PC • THOR
MAKING BUSINESS DECISIONS • AGENT USA
OWLCAT • MONKEYNEWS • MICROS FOR MICROS
NOMINATION • REGATTA • MOVIE MAKER
RUN FOR THE MONEY • SEVEN CITIES OF GOLD

* In Canada, contact Holt, Rinehart and Winston at (416) 255-4491.

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Hitch your Apple to a Star.

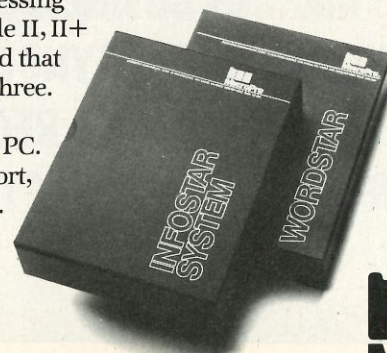


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*Free StarCard package includes:
6 MHz Z-80 microprocessor; 64K of RAM; CP/M Operating System, Version 2.2.

MicroPro.

Going On-Line The Easy Way

IN-SEARCH Menlo Corp., 4633 Old
inside Dr. #400, Santa Clara, CA
95050, (408) 986-0200; runs on IBM
Personal Computer and compatibles,
Texas Instruments Professional; \$399;
tail.

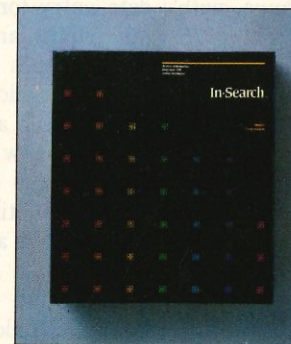
There are more than 1500 on-line information services you can reach with computer, modem, communications program and telephone—but the process may not be quite as simple as you'd like it to be. Dialog, the biggest of these data bases—with over 80 million references—offers a day-long course for \$135 on how to access its storehouse of knowledge and there are more extensive private courses available. The founders of Menlo Corp., who believe access of such information services will become the next widespread personal computer application if it is made easy enough, designed In-Search to make Dialog accessible within minutes. The program is aimed at helping novices by automating much of the search task as possible while structuring the rest with the latest in user-interface design. Yet In-Search is useful even for professionals trained in the use of Dialog, according to Menlo Corp., because it helps build efficient search strategies in order to minimize connect time.

What kind of information is contained in Dialog? A sampling: multidisciplinary coverage of scientific and technical literature, an index to the National Library of Medicine, electronic yellow pages for the entire United States, Dun & Bradstreet's information on more than a million corporations, a business information source called *Bustext*, the biggest English language data base in physics and electronics, and even a microcomputer Index.

Getting started with In-Search is actively easy. After you follow a configuration program, you access Dialog by reading the computer screen and doing what you are told. Without looking at the documentation and after only a few minutes at the keyboard, I retrieved 28

references to an as-yet unannounced personal computer and 12 articles that speculated on how it would fare in the marketplace. I was in rumor heaven.

In-Search guides you to the proper data base quickly. The data bases contained in Dialog (there are over 200) are organized into four knowledge groups: Arts, Education and Social Sciences; Business, Government and News; Biology and Medicine; and Engineering, Mathematics and Physical Sciences. When you select one of these categories from the highlighted window, the cursor moves to the newly activated window below it, where you can scroll through the subjects available in the category. Once your subject is selected, you can move through a series of



what look like index cards that describe the relevant data bases. In-Search makes this hierarchical search process exquisitely simple and the descriptions of the data bases tell you not only what kind of information they contain, but how much they cost to use.

You enter your query by filling in lines with keywords and phrases. Say you think coffee is keeping you up at night and want to find out more. On separate lines labeled S1 through S14 you could put "caffeine," "sleep," "caffeine or coffee," "insomnia," "sleeplessness" and various combinations of those lines, such as "S1 and S2" or "S4 and S6." All you need to do to retrieve references is press the command key F9 and Return.

In-Search takes care of the necessary telecommunications automatically. It was a pleasure to simply sit back and watch the program fight its way through our PBX, the Bell system and one data communications network after another until it managed to find a free port, log on with the Dialog mainframes, verify my password and enter my search strategy.

When your search is finished, ten or so seconds later depending on complexity, you see the number of references

found for each word or phrase and combination and are presented with several options: refining and redoing your search, going off-line or downloading a given number of the references at various levels of detail. When you retrieve references, you can read them on-screen, store them on disk, edit them using commands familiar to anyone who knows WordStar and print them out.

Remember: I did everything discussed so far without reading the documentation beyond the pages that told me about configuration and starting the program. It seems possible to ignore the documentation almost completely—but don't, even though you have the option of touching F1 to bring up help screens specifically for the task you are currently engaged in. The documentation is valuable because it teaches more than just how to run the program—it can show you, for example, some tricks for more effective search strategies, such as using wild card characters to make sure you find all variations on a given word root.

In-Search is well-done, no question about it, but a caveat is required to keep your on-line expectations *in line*. Dialog may locate an article that contains exactly the information you need—but all you'll be able to download, in many cases, is bibliographical information about the article and a brief synopsis. Dialog accepts orders for "hard copies" of the original document, however, and In-Search makes placing that order just a matter of hitting a few keys. The bibliographical information could be used to get the document at a local library, but that isn't the same as having it load onto your disk at the touch of a key.

While the cost of using In-Search may seem high because of charges for time on-line and \$10 plus postage or more for each hard copy you order, In-Search certainly succeeds in reducing the frustration and time involved in tracking down information. And for heavy users of Dialog, the cost of the In-Search package itself may be recovered in reduced on-line charges.

—Kevin Strehlo

For more information circle 101 on the reader's service card.

Data In A Nutshell

■ **NUTSHELL INFORMATION MANAGER** *Leading Edge Products, Inc. Software Sales Division, 55 Providence Highway Norwood, MA 02062; (800) 423-0300; for the IBM Personal Computer and compatibles; \$395; retail.*

Nutshell is another entry in the already overcrowded field of easy-to-use but surprisingly powerful data base management systems for the IBM Personal Computer. That's not the most exciting description for a new product, but it does put Nutshell in good company with powerful packages like PFS:File and Power-Base. In addition, Nutshell has some innovative and highly useful features which make it stand out from its competition and which should encourage anyone in the market for an office data base management package to give it a closer look.

Foremost among these features is the speed with which Nutshell can find virtually any information you put into the data base. The program accomplishes this by making every field a keyed index field—that is, by indexing every word you enter in every field or blank, in the file. Because the data is indexed, the program will find it very rapidly when a search is initiated. With most data base management programs, there's a limit to the number of keyed index fields you can create. While you might also be able to search for data in fields that aren't indexed, that search will be much slower, because without indexing, the program will have to read every piece of data in that field in every record. But because everything in Nutshell is indexed, any search will be fast.

For example, a real estate broker might have to keep a data base of the homes he's trying to sell, setting up data entry fields for the address, number of bedrooms, number of bathrooms, type of heat, etc., as well as a blank area for general comments. If a client is interested in a sunny home with three bedrooms, located near transportation and shopping facilities and costing less

than \$100,000, the broker could initiate a search for that particular combination by specifying the number of bedrooms in the bedrooms field, the desired price range in the price field by entering 100,000 (Nutshell supports a full range of math operations) and by entering the terms "sunny" and "transportation" in the comments area.

Of course, indexing every entry makes for big files. Depending on the size of your records (and they can be huge, with theoretical limits of 16 million characters or 60,000 fields per record), you could end up filling the disk containing your data base and not being able to add any more records, but Nutshell has a data compression feature that should reduce the problem and it also supports

the use of a hard disk.

Nutshell also sets itself apart from the competition by living up to the term "easy-to-use" in every phase of its operation. When you're dealing with data base management software, there are two distinct activities that have to be measured by the ease-of-use criterion: (1) the process of defining your data base—what information it should contain, and what reports should look like on the screen and on paper; and (2) the process of actually using the data base you've defined to store information and to find or sort or print information you've already entered into it. Some data base managers make the first of those activities easy, and some the second, but few make both truly simple. Nutshell does, partly due to its menu structure and help screens and partly due to its use of multiple forms, or "layouts."

To set up a new file in Nutshell, you simply indicate that you want to add fields to an empty file. For each field, the program prompts you to enter a label (such as Name: or Street Address: or Current Past Due:) and then to identify whether the data to be entered into the field is to be text, numbers, a date, the result of a mathematical function

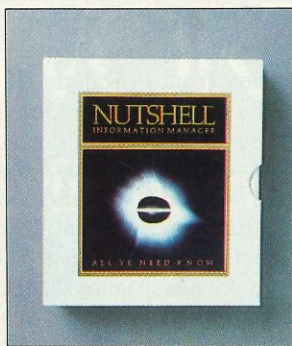
involving numbers from other fields, the current record or a summary (total, average, mean) of the data entered, specified fields in every record.

As you create new fields, Nutshell displays them down the left side of screen, with 50 blanks after text fields, 10 after data fields, and 15 after other varieties. Since at any point you can stop creating fields and start entering data, this is your first form, or out. But it's not the most attractive data entry form in the world, and not particularly efficient to have blank spaces in a data field such as State:, in which you only want to enter a two-letter abbreviation. So you create a new layout, rearranging order of the data entry fields on screen, deleting some that you don't want to have appear (as you might want a calculation field), increasing or decreasing the number of blank spaces after each field, using up to 16 different colors to highlight fields and prompts, and generally designing a form that is more attractive and easier to use.

Nutshell provides almost unlimited versatility in the size and format of records. It also has a lot of features designed to make it very friendly. The VisuALL package provides the function of every command key (i.e., menu-driven command environment) for MS-DOS. When VisuALL boots a menu appears listing options such as "List Files On A," "Copy One file to another," and "Rename A File." You can select an option either by using your personal computer's cursor-control keys to move the cursor to the option and pressing F2 to select it or by using a mouse button to select the option. Once an option is selected, VisuALL issues the necessary MS-DOS commands to perform the operation, prompting you for input when necessary. For instance, if you select "Rename A File," it displays a directory of files on the disks in drives A, B, C and its versatility, power and ease-of-use should earn Nutshell a place in many offices.

—Paul Bonner

For more information circle 102 on the reader's service card.



A New 'Operating Environment'

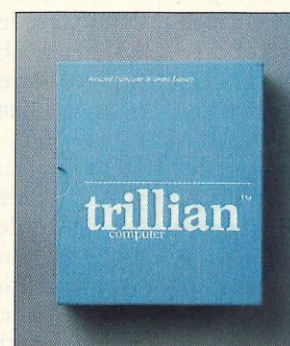
■ **VISUALL** *Trillian Computer Corp., 29 Central Ave., Los Gatos, CA 95031, (408) 358-2761; runs on IBM Personal Computer and compatibles; \$99.95; retail.*

Trillian's VisuALL is the latest in a series of "operating environments" for MS-DOS based machines. Much like its predecessors, VisuALL acts as an interface between the user, MS-DOS and other programs. But where previous operating environments such as Quarterdeck DesQ or Microsoft Windows—were designed to add multi-tasking capability to existing software by allowing several programs to be co-resident in memory and to make data transfer between programs easier, Trillian has taken a different tack with VisuALL.

Designed as a visual shell for MS-DOS computers, the Trillian offering is designed to provide a consistent, easy-to-use menu-driven user interface for MS-DOS and any program running under it. The VisuALL package provides the function of every command key (i.e., menu-driven command environment) for MS-DOS. When VisuALL boots a menu appears listing options such as "List Files On A," "Copy One file to another," and "Rename A File." You can select an option either by using your personal computer's cursor-control keys to move the cursor to the option and pressing F2 to select it or by using a mouse button to select the option. Once an option is selected, VisuALL issues the necessary MS-DOS commands to perform the operation, prompting you for input when necessary. For instance, if you select "Rename A File," it displays a directory of files on the disks in drives A, B, C and its versatility, power and ease-of-use should earn Nutshell a place in many offices.

—Paul Bonner

For more information circle 102 on the reader's service card.



MS-DOS command to rename the file.

VisuALL is easy enough to use to be of value with simple, easily learned MS-DOS commands such as renaming a file, but it's also complete enough to be of great assistance with more complex commands such as the MODE commands to set parameters for serial and parallel ports. Of course, you could learn how to issue those commands yourself, but with VisuALL there's no need.

Of course, most people are more concerned with applications programs—word processing, data base management, etc.—than with MS-DOS. That's where another item on the VisuALL menu—"Add a shell"—comes in. Trillian offers add-on VisuALL shells for a wide variety of popular programs, at \$49.95 each.

With the add-on shells, VisuALL essentially transforms your MS-DOS machine into something resembling Apple's Lisa, in that learning to use any new program requires only that you know what the program should do, you know how to use a mouse or to press a function key and you're able to read a menu.

For example, let's look at what VisuALL does for WordStar. Without VisuALL, a newcomer to WordStar could imagine its authors working overtime to perfect help screens and command structures that would confound even the most seasoned computer user. With VisuALL's WordStar shell, on the other hand, you can begin producing real work with WordStar instantly, relying entirely on VisuALL's on-screen menus, help screens and manual.

To use the WordStar shell, you begin by booting the VisuALL disk and then selecting "Edit a file (WS)" from the VisuALL menu. You are then prompted to indicate which disk drive contains the WordStar disk, whether you want to edit it in the Document or Nondocument mode and the name of the file you wish to edit. At that point VisuALL takes over, booting WordStar and opening

the file you requested. Once you're in WordStar, pressing F1 brings a VisuALL menu listing choices including Editing Options, Text Formatting Options, Find & Replace Options, File Options and Print Options onto the screen. Selecting one of these options brings up another menu listing all of WordStar's options in that area. To select an option you simply move the cursor to the one you want and press F2. The VisuALL menu then disappears while VisuALL carries out your command.

VisuALL thus makes it very easy for a beginner to get into an applications program and start producing real work right away. But what happens after you've been using it with a program for awhile. Since VisuALL enters all command sequences for you, you never learn those sequences yourself. That's fine for complex or seldom-used commands, but for simple things such as deleting one word—the kind of command you learn quickly and issue automatically with any program—VisuALL can sometimes be more trouble than it's worth. It can take 10 keystrokes just to get to the menu option for that operation.

One way around this problem is to use a mouse to control VisuALL, rather than the cursor and function keys and thus reduce the tedium of using selecting items to a few clicks of the mouse button. The other solution is to learn how to issue the commands you use most often yourself, relying on VisuALL for help with only the more complex or seldom used commands.

All in all, this is an intriguing product which, thanks to the universal user interface it provides, has the potential to breathe new life into a lot of tired old software packages. In the long run, VisuALL will have to be judged against its competition. Similar programs—including Microsoft Mouse Menu—have already begun to appear. But for now, it's clear that with VisuALL Trillian has made a strong start in this new area of software, one that will benefit anyone who uses it.

—Paul Bonner

For more information circle 103 on the reader's service card.

"Magical" Data Base Management

■ **ALADIN;** *The Advanced Data Institute of America, Inc.; 1215 Howard Ave.; Sacramento, CA 95825; (916) 925-2229; runs on MS-DOS; Apple II, IIe, (64k), III; IBM Personal Computer, PC/XT; Corvus Concept; Sage II/IV; DEC Rainbow; TI Professional; Altos 586; \$595 (Apple II), \$795 (others); retail.*

Aladin is a relational data base program that runs on the Apple II. That's something of a feat. There are only two other programs that provide relational systems on the Apple—dBASE II and Day One. Both require the purchase of a CP/M card, since they are written for that operating system. Aladin requires only a RAM card to run on the Apple II.

Aladin also runs on MS-DOS computers (larger memory and greater disk capacity) where it performs admirably.

I found that the program worked well on the Apple II and it did indeed provide relational data base management capabilities. You can have as many as five files in a relation and can jump from one file to another and back again easily. You can also generate reports from the data base that use all the files. Entering the data base design isn't a problem—you decide what you want the files to look like and then follow screen prompts to describe the relation. After the specification is complete, including which fields are to be protected, which are to be key fields and which are to be branching fields, you follow the program's lead in constructing the data-entry form on the screen.

Aladin has several modules that provide its basic functions. The first is the data module, which lets you enter, change and retrieve data. The report module allows you to generate reports and lists. The query module lets you customize the way you retrieve information. The calc module lets you do calculations within the data base and in the report module. The group module provides for clustering the data into

groups for processing by the stats module. Finally, the word module provides the bridge to word processors.

All these modules operated on a Compaq with 256k of RAM. Reports were generated with totals in the columns using the calculate module. But on the Apple II, because of a lack of disk space, the calculate module isn't provided. (If you have a hard disk, you can get the calc module to run on it

for a small charge.) Without the calc module, you can't get a report that will total a column of figures or compute a column from others. I was astounded to find that a program that lets you do complex statistical analyses of data doesn't let you total a column of figures.

The lack of the calc module is a serious flaw. Aladin uses calc to do multiple-field sorts. No calc, no secondary sort, so no multiple sorts on Apples.

None of these problems exist on MS-DOS computers. And on those computers, you can do the word-processor bridge to popular programs like WordStar. You can get graphic analyses of data as well (graphing and stats work on the Apple, too). On MS-DOS the program delivers what it promises. Let me amend that. It delivers almost everything it promises.

Commands should be consistent from one part of a program to another. Error messages should be clear and self-explanatory. You should be able to get into and out of a program in a sensible way. Finally, the documentation has to be clear.

The documentation leaves much to be desired. It took seven hours to run through half the tutorial on an Apple because it is confusing, misleading and in at least one case wrong. The Apple tutorial leads you through getting a report with totals and subtotals, although that capability isn't present. The publisher is currently changing the documentation.

On the Compaq it required about three hours to get a little farther than

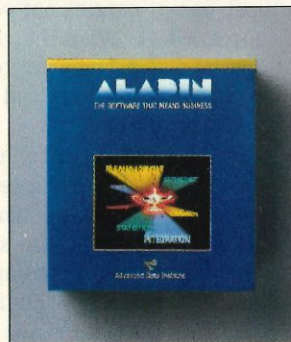
on the Apple. The MS-DOS tutorial isn't nearly as bad as the Apple version, but it still has its traps.

In the Apple version, you're told to quit what you're doing and get to a menu, you should either hit ESC or ESC 0. Hitting ESC gives you nothing. Hitting ESC ESC gives you an invalid character error message. Hitting ESC 0 works. In the MS-DOS version, you're told that selecting an item is accomplished by placing a caret on that item's field on a data form. You're told to use SHIFT-6 for the caret. Day forget which data is lier you were told that you should use function keys for selecting menu items. Now those instructions seem clear enough, except that when you get to selecting items for a report, Documax from the Define-Report menu has a function key for Select. Should you be consistent and use the function key, like you did everywhere else or should you use SHIFT-6? It turns out that both work, but the tutorial doesn't mention the Select key.

While working on the Apple version I inadvertently tried to read a data file from a disk I use with my word processor. But I had put the wrong disk into the drive. There appeared several arcane Pascal error messages which made no sense. Instead, there should have been a message like: "No user may keep track of what's on your Drive 2." The documentation doesn't tell you what the Pascal message means. The problems with the MS-DOS version's documentation are merely annoying, but surmountable. However, the Apple version's documentation problems are infuriating. Not that it's badly written; in fact the manual uses a clear, informative and friendly style. It is a refreshing change from most documentation.

If you're looking for a powerful relational data base manager for MS-DOS computers, Aladin has all the power you need. On Apple II computers, the lack of the calc module is a serious flaw. In addition, a hard disk allows incorporation of the calc module. In any case, prepare to spend a lot of time learning to use the program. It can do what you need, but not easily.

—David Gabel
For more information circle 104 on reader's service card.



Putting More On A Disk

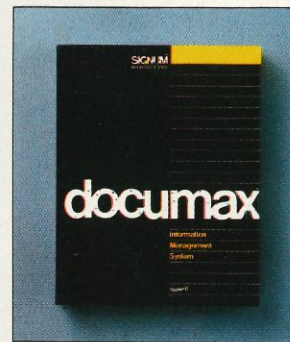
■ **DOCUMAX** *Signum Microsystems, Inc., 120 Mountain Ave, Bloomfield, CT 06002, (203) 726-1911; runs on the Apple II Plus, IIe under DOS 3.3 and versions are planned for the IBM Personal Computer; for CP/M and for Apples running PRODOS; \$175; retail and direct order.*

If you work with a lot of text files on a computer you know what a hassle it can be to find information in those files. You may forget which data is which files, you may have to switch disks to find the files you need. Documax from Signum Microsystems, for Select. Should you be consistent and use the function key, like you did everywhere else or should you use SHIFT-6? It turns out that both work, but the tutorial doesn't mention the Select key.

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—David Gabel
For more information circle 104 on reader's service card.



mat a disk for either Apple DOS (without DOS on the disk, saving 35 sectors) or in compressed format; or quit the program. The designers provided a helpful quitting feature. Press Q for quit and you get a message to press any key to boot a disk. Insert another disk, press any key and you're off and running in a new program.

All functions are menu-selected and menu-driven. That is, each of the 12 functions is selected by pressing a number or letter from the main menu. Then the program presents sub-menus to guide you through the function you've selected. In the compression function, for example, the program presents a catalog of the document disk (the disk containing the documents to be com-

pressed) and a sub-menu of functions to accomplish the compression. You select a file for compression by moving the cursor to the file in the catalog using the arrow keys and then pressing S for select. You can select as many as 12 files for compression at a time or they can be compressed one at a time. There is no provision for compressing all the files on a disk at once, which may prove annoying to some. But after you've compressed 12 files, you can go on compressing more; if there are more, 12 at a time.

While compression is going on, the program lets you know what's happening through a series of messages. The messages tell you which file is being compressed, whether it's being read, written, verified and what the compression factor is. On most of the files I compressed, compression came out between 45 percent and 65 percent. Overall, I managed to squeeze the files on 10 full DOS 3.3 disks into three and one half compressed disks.

Compression takes place in memory, using some proprietary algorithms that Signum isn't willing to talk about. After the spaces and redundancies are removed from a file, it is stored onto the specially formatted compressed disk.

DOS can catalog those disks but can't read them. You can only read from a compressed disk with Documax. So if you've compressed some files, don't lose your Documax program disk. You get a master disk and a backup when you buy the package.

If file compression were all this program did, it would be useful, but not extremely useful. In fact, Arthur St. Hilaire, one of the two developers of the program, says it started with just the compression algorithm and then the developers realized that that wasn't terribly useful. Now the program does more. First, it recovers (expands) compressed files so your normal programs can use them again. Second, it lets you search the files you have compressed for keywords so you'll know which ones you want to recover (or which ones you want to compress).

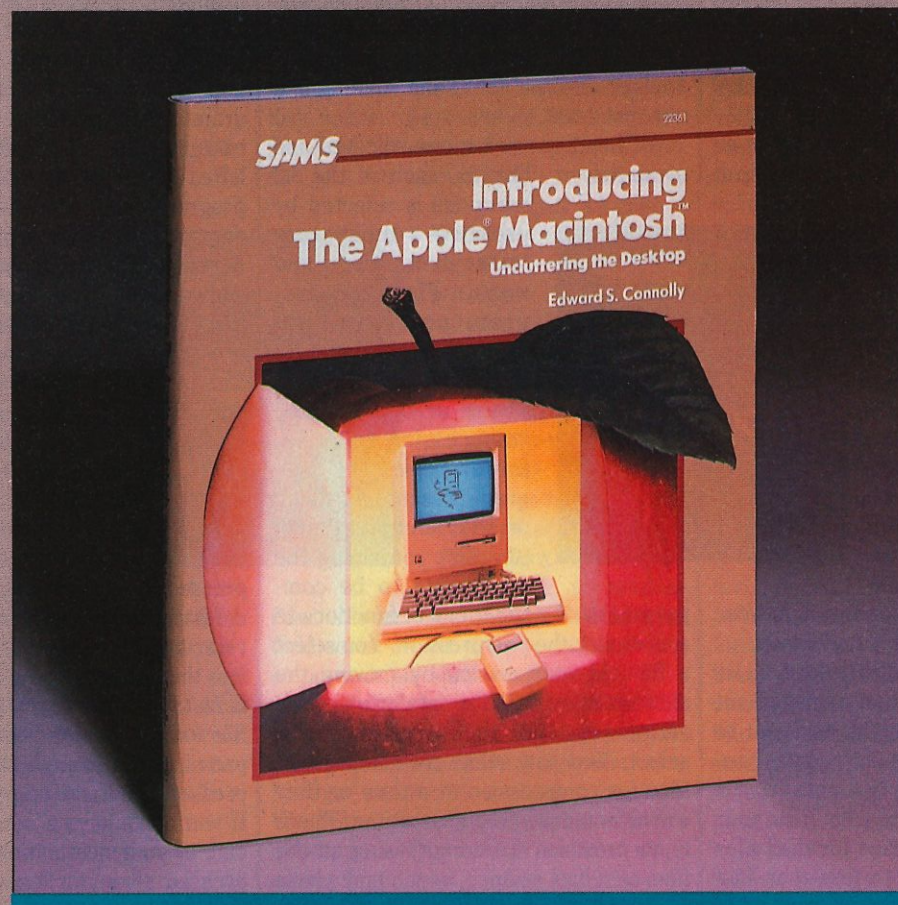
I was entranced with this program. In fact, I was so entranced that I compressed 10 disks. And, I should add, I did it right out of the box with very little referral to the manual. Overall, I spent less than an hour doing it. This program is fast. Compressing a 58-sector binary file took 15 seconds of reading, compressing, writing and verifying the compressed file. Error trapping is excellent. If you don't have a compressed-format disk in your destination drive for compressed files, for example, Documax stops, informs you of the condition and prompts you to insert a properly formatted disk.

The documentation is excellent. While the menus are straightforward, you can get to places where you don't know what to do. In those circumstances, it's easy to find that particular function in the documentation and the explanations there are clear and concise. They are also accompanied by screen illustrations.

All in all, this program is very good for those who have to cope with a large number of document files. Its compression and search features combined with simplicity and speed should make file management easier and a lot more efficient.

—David Gabel
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TOP 20/PERFORMANCE

Software That Helps You Think

THINKTANK; Living Videotext, Inc.; 200 Elwell Court; Suite 232; Palo Alto, CA 94303; (415) 564-6300; runs on 3M Personal Computer, XT; Apple II, e and III (available for Macintosh and IBM PCjr by mid-summer); \$195 (BM), \$150 (Apple); retail.

That computers should one day be able to think like humans is an implicit promise of the technology. But that promise is still in its infancy. Living Videotext, Inc., of Palo Alto, Calif., has attacked the problem of thinking and computers from a different perspective, with their release of a program named ThinkTank. Says Dave Winer, the program's inventor, and president of Living Videotext, the name was chosen from some 100 entries because it ... communicates

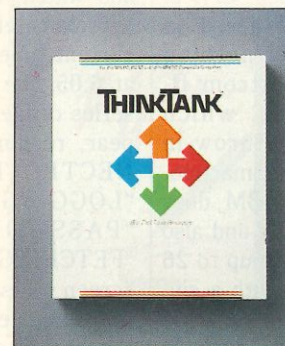
what we thought people would do with the program. Use it to help them think." Helping people to think, at least the way Winer sees it, is best accomplished by providing them with a software tool to create outlines of the kind that every child learns about in grade school. If Winer's approach sounds simple, it is, but it's from that simplicity, and the clarity it delivers, that the program gains its remarkable strength.

ThinkTank provides a way in which to dissect a piece of information into its component parts by listing each of those parts as a headline within an outline. Once it's dissected, you're able to see each part, or headline, as a separate component. Further, the headlining technique allows you to see relationships between components which would otherwise be hidden within the infrastructure of the information.

Since the program provides a way in which to enter text beneath each headline (up to 20,000 characters or 69 lines), the outline can be as simple or as complex as you want. And since the program gives you a way to hide that text through what's known as the *lapse* function, you can continually check your main outline to make sure you're not wandering far afield.

Because this taking apart—or building—of ideas is accomplished by nothing more daunting than an outline, the program has the grace of being easy to use. The documentation is easy to follow and screen shots have been included that are actually useful.

But neither the documentation nor the program is perfect. For example, the manual doesn't warn that in *porting*—or transferring—a DOS file into



ThinkTank, the program will crash if that file exceeds 69 lines of text or 20,000 characters. Nor does it explain that if you run Tank on an IBM compatible, you must use DOS 2.0, not DOS 1.10 in order to avoid having the program do weird things. The reason for that, according to Mary Cadloni, customer service representative at Living Videotext, is because of the "... incompatibility of the (IBM compatibles') hardware with IBM's operating system."

The flaws in the program are not so much in what it fails to do but in the amount of work you have to do to create an outline. For one thing, the booting process is cumbersome. Since you can't copy DOS onto the Tank program disk, you have to first boot your computer with a DOS disk in Drive A, then remove it, put the Tank disk in Drive A, and type in "Tank." If you try to copy DOS onto the program disk, according to Cadloni, you may damage it. It would be cleaner if you could install DOS.

Tank stamps a date on each outline as it's created. But in order to change the day-date, you have to use the arrow keys on the keypad to move it forward or backward. The slash key changes the month and the year by moving them, one at a time, forward or backward. A keyboard entry would have been easier.

Tank automatically loads the last outline you worked on when the program is booted. It's annoying because it takes several keystrokes to close that outline, go to the *files command menu* and either open an existing file or create a

new one. Winer has tried to make this process as easy as possible—there is a *browse* command, which lists the names of existing files on both drives, but with all the keystrokes and menus, it's awkward and time consuming.

To create a new outline, you must first close the one Tank has loaded—or the one you were working on—then go to the *files* command from the main command menu. When the program prompts you for a name for the new outline, you type in your choice. You can designate Drive B by prefixing the file name with B:. It's simple enough, if you let Tank use its own file name extensions. But if you use one of your own, it will override the one Tank would use, which means Tank can't write the file name to its directory—so Tank can't reopen the file because it won't find the file name in its directory. You can open the file manually by typing in the name and extension using the *enter* command, provided you remember the name you used.

When your outline is done, Tank has provisions for *porting* it to your printer (you can control the format through 17 commands) or to a compressed file that Tank can later recall (to save space on the data disk) or into a DOS file which a word processing package like WordStar can read. As nice as that is, it could have been much better. When your word processor retrieves the file, it's *not* in the outline form you created. Tank will let you *port* a DOS file into it, but what you get is straight text that has to be dealt with line by line to put it into outline form.

Are these flaws a major problem? Well, maybe yes, maybe no. One thing is clear: To the extent that the system or the software interjects itself between the user and what he's trying to accomplish, the answer is yes. If the user has a high tolerance for things like excessive keystroking, then the answer is no. For the rest of us, it depends on the value of what the program finally delivers. Even the most impatient of us will put up with inconvenience if the rewards are right.

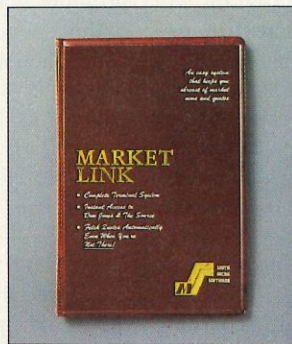
—Ernest Baxter

For more information circle 106 on the reader's service card.

Wall St. Comes To Main St.

■ **MARKET LINK** Smith Micro Software, Inc.; P.O. BOX 604; Sunset Beach, CA 90742, (714) 964-0412; for the IBM Personal Computer; \$59.95; retail.

Market Link is a throwback to an earlier and simpler time, when software packages attempted to do only one thing at a time, instead of doing everything but your laundry... when they sold for \$50 instead of \$700... when their documentation would fill a vest pocket, not a file drawer. Software of that era had its charms—it did what it said it would do and it was remarkably unpretentious compared to the monolithic packages that fill the color ad pages today, but there's also a good reason for the developments that lead us to speak of it in the past tense. That is, that the jobs people do



on personal computers usually involve many interrelated tasks, and that with that older genre of software someone attempting a task of any complexity soon found themselves trying to assemble a puzzle out of 40 or 50 small pieces that didn't quite fit. Hence the Lotus 1-2-3s and Context MBAs of our time.

Nevertheless, here we have Market Link from Smith Micro, a package with all the charms and inadequacies of that age gone by. Unpretentious packaging. Minimalist documentation. And just a few simple promises of what it will do. Foremost among those is that it will automatically log onto the Dow Jones/News Retrieval Service and then fetch and store to disk current quotes for up to 27 securities. You simply indicate which securities you're interested in and the quotes are retrieved. Market Link does the rest. So you could even take advantage of the fact that Dow Jones charges only one-sixth as much for access time after 6 p.m. (10 to 15 cents per minute, instead of 60 to 90 cents) by leaving Market Link running on your computer when you leave the office. When you drop in at the office after the theater or a "working" dinner in town, the quotes you want will already be stored on disk.

Market Link also allows you to log onto Dow Jones or The Source at will. Selecting the menu choice to log onto either of those services results in Market Link dialing the local Telenet, Tymnet or Uninet access number, issuing the appropriate commands to access the desired service and issuing your password and subscriber number. Thus, a single-keystroke command gets you to either The Source's main menu or to

the command level of the Dow Jones service. This feature is a nice extra, but it's nothing special. Smartcom II, for instance, which comes as a throw-in with a Hayes Smartmodem for the IBM, does the same thing and also lets you define up to 26 macros that with a single keystroke will let you do things such as

check your mailbox, send mail or even check current market prices. Since Market Link requires a Smartmodem (or a Hayes-compatible modem), this is a comparison that will be made frequently and one in which Market Link loses hands down. So, Market Link's value must be judged chiefly on its ability to retrieve current quotes from Dow Jones while you're off doing something else.

It does that pretty well and in a way that requires minimal effort on your part. Basically, setting up Market Link for automatic retrieval is a three-step operation. If you don't change any of the options already set during that operation, it only has to be done once. The first step is setting up some standard system parameters about your computer and modem and supplying the program with the local access numbers for Telenet, Tymnet and/or Uninet. Then you must indicate your password, account number and which of those three access services you wish to use to connect to Dow Jones and/or The Source.

Next, you enter information for each of the securities for which you wish to retrieve current quotes. Requests for information on up to 27 stocks, bonds,

options, mutual funds and/or treasuries bills can be entered. Finally, you give Market Link up to six different times at which it should automatically log onto Dow Jones.

As an example of how Market Link works, let's say that we had designed it to be used at 6:05 p.m. as a retrieval time and we booted Market Link at 6:03 p.m. The main menu would display both the current time and the designated retrieval time. If we decided to sit around and watch, nothing would happen until approximately two minutes, other than the current time being updated. But at 6:05, the screen would clear and a series of messages would begin to appear, reading, "DIALING #," "CONNECTED TO LOCAL NUMBER," "LOGGING ONTO DOW JONES," "PASSWORD ACCEPTED," "FETCHING DATA." At that point the screen messages would stop for a couple of minutes as Market Link retrieves the requested data. Finally, the screen would return, displaying the message "6:05 COMPLETE" to indicate that the program had successfully retrieved the data you requested.

The data Market Link retrieves would be stored in a file called "1805.QTE." You can do two things with that file: Review it on the screen or print it. In either case, what you would get would be a form with the heading "Security Quotes At 06:05 PM, a list of column headers for Security Symbols, Bid/Close, Asked/Open, High, Low, Last and Vol(100's) and then the data for each of the securities you requested.

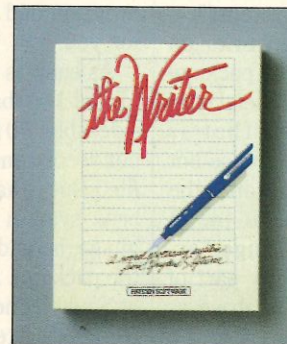
Smith Micro says that Market Link was designed specifically to meet the needs of investors and market enthusiasts and that it was the result of requests from their customers for a program that would automatically retrieve current prices. For people who need that feature, Market Link was the job. But for someone who wants more complete communications capabilities or even one that will automatically retrieve information from Dow Jones other than current quotes, Market Link is not the answer.

—Paul Boyer
For more information circle 107 on the reader's service card.

Affordable Word Processing

■ **THE WRITER** Hayden Software Co., 10 Suffolk St., Lowell, MA 01853; (617) 937-0200; \$49.95; for Apple II, IIe, Plus, Franklin Ace, IBM Personal Computer, PCjr; retail or direct order. Hayden Software's The Writer is billed as "an easy-to-use word processor for home, school or office." The program is actually a scaled down version of the company's PIE:Writer word processor. By cutting out some of

more advanced features of PIE:Writer (electronic mail among them) and adding help screens, Hayden Software has endeavored to produce an affordable yet powerful package which can be easily learned and used by just about everyone who needs word processing. As word processors go, this is a fairly powerful



program. Beyond the basic one-character insert and delete functions, there are commands for deleting, inserting, copying, and moving lines or blocks of text within a file, splitting lines and rejoining them with other lines, as well as search, and search and replace capabilities. All of these features can be activated with two- or three-keystroke commands.

The Writer's formatting capabilities are extensive: margin and paragraph faults can be set in a variety of combinations and changed to suit different document requirements. Centering, left and right margins, columns, line spacing, and indents can be set and changed, and running heads and foot titles can be created. The program will underline text, produce superscripts if your printer supports them. The mail merge feature included in the program lets users set up data which can be merged into form letters or other documents.

These features are impressive in light of The Writer's retail price: \$49.95 gets you capabilities normally found in packages priced at up to the \$500 mark.

Is The Writer easy to learn? Well, not really. To people with no word processing experience, the command structure of this program will seem rather arcane and "programmish," and there are no templates, icons, or key labels to make learning less tedious and retention less stressful. The onscreen tutorial is little more than a video version of the documentation, and while the reference card makes a valiant attempt to cram every

conceivable command into a standard card format, the result is daunting.

There are real problems with The Writer's documentation. These range from minor yet annoying points like the fact that nowhere on a given page does the chapter number appear, making it impossible to

tell exactly where you are in the manual (this becomes even more frustrating when you're told to refer to another chapter and you don't even know which one you're reading) to a lack of logical, step-by-step progressions in the examples which illustrate the program's features. Printout examples are given in 40-column format, which is frustrating if you're using an 80-column card.

Hayden Software's major concession to ease of use comes in the form of help screens (five in all) which appear at the top of the typing area when a file is opened. These screens are an honest effort to guide the user through the labyrinthine command structure, and in some areas they succeed. But again, there are problems.

The first set of aids presents the basic cursor movement commands—usually one alphabet key which is pressed at the same time as the "control" key. The help screen assumes you will remember to press the control key along with the letter key—there's nothing to remind you in the help screen itself. Of course, if you don't remember, the command won't execute—type C alone and you get a C on the screen.

More irritating is the strange layout

of this help screen. The keys which control basic cursor movement are grouped in a manner which Hayden Software is fond of calling "the lopsided cross"—the E, S, F, and D keys move the cursor one line up, one space left, one space right, and one line down, respectively. But in order to accommodate the tab commands (A and G) on the same help screen, the cross has been expanded, with the tab keys inserted in a line between the E and the D keys. It's hard to describe in words, and just as hard, if not harder, to decipher on the screen.

The second help screen, which is activated by pressing control and Q (oddly enough, the screen tells you to press control with the Q, but not with the other commands) follows the same annoying format, although things do get better in the right half, where search, replace, word wrap and exit commands are clearly displayed. Subsequent screens show paragraph, layout, and indent commands, and commands for creating head and foot titles.

So while the help screens can help (a little), you really do need to sit down and learn those commands.

Who can use this program? For basic office work, it's probably as good as any of the available mid-range programs, and certainly a lot cheaper. For the intrepid home user, The Writer could be valuable for correspondence and other tasks. And, I suppose, for very intrepid schoolchildren, The Writer could produce some impressive book reports. In fact, whatever you need a word processor to do, The Writer will most likely do it, and at a very reasonable cost—if you're willing to put in the time to learn your way around the program.

Hayden Software is clearly on the right track with The Writer. The amount of word processing power and versatility offered per dollar of purchase price might already be hard to match by anything else on the market. But it may take a few more incarnations of PIE:Writer before the company produces a package which can truly be called easy to learn and use.

—Nora Georgas
For more information circle 108 on the reader's service card.

Customizing Your Data Bases

■ **SAVVY PC** *Excalibur Technologies Corp., 800 Rio Grande Blvd. N.W., Albuquerque, NM 87104, (505) 242-3333; runs on IBM Personal Computer, XT and PCjr; \$395; retail and direct order.*

One of the more potentially frustrating tasks to be accomplished at the computer is attempting to make your information fit into a data base that wasn't specifically designed for your needs and wants. But developing a data base that is just right for your methods and purposes can mean programming it yourself—either making serious modifications in the program you use now or starting from scratch.

The problem in doing it yourself is that programming languages speak in a very different tongue than our own; the frustration usually begins not with the logic of programming—it's the same logic used in any problem-solving endeavor—but rather with trying to figure out an acceptable way of expressing a solution.

Savvy, a "natural language" developed two years ago by Excalibur Technologies Corp., does not have this problem because it "speaks" the same language we do: English. And Savvy PC, the latest offering from Excalibur, incorporates the ease and flexibility of the Savvy language into a custom data base package for IBM users.

The Savvy language, until now, has been available only for the Apple II series and required a Z80 co-processor board. With the IBM Personal Computer, XT or PCjr, you need only the software itself.

What does Savvy PC do? Since the package comes fully equipped with the Savvy programming language, Savvy PC can really do anything that any other programming language can do, according to Nels Winkless, director of corporate communications for Excalibur. But, he points out, that sort of open-ended definition was the first stumbling block in trying to explain Savvy and why someone would want to use it. And

while there are people out there using the Savvy language for everything from farm management to hospital infection control, Savvy PC is geared toward the use and development of custom data base systems.

"For a long time we were saying 'Boy, it's terrific, you can do anything with it—look at this,'" Winkless says. "And as soon as you say that, nobody can think of anything specific to do. So we finally said, 'OK, it is a data base system.'"

Savvy PC works on two levels. The package includes a Model Database system that is ready for you to use but that also integrates the Savvy language to let you easily change, expand or link any part of that Model Database as the need arises. Or, at a more involved stage,

you can venture off on your own—Savvy language in hand—and find out how much fun programming can be when you're worrying more about what to say and less about how to say it.

"We've designed Savvy PC so that you can bring up a data base system and never have to get into the rest of Savvy at all," he says. "On the other hand, if you want to . . . get into the rest of Savvy, you can do whatever you can with any other computer language with relatively little strain. We're going after the people who want to get started that easily and who will acquire a taste for modifying the system—having all the flexibility without quite so much pain."

Getting the Savvy PC Model Database up and running requires very little time and nary a wince. Included in the two-disk package (both double-sided) is a Model Database Sampler to guide you through designing and getting around files and reports. The 70-page manual that covers using the Model Database is clear enough and even borders on the superfluous in parts because the commands you'll need are all on-screen. Designing the layout for files and reports is a bit more muddled than need be, but the delay is momentary.

Once the Sampler program has given

you what little confidence you need to proceed, it's on to the Model Database itself—which is clean of any sample information. After you've answered the program's prompts as to what data base should contain and how it should look, Savvy PC will take a minute or two to turn your instructions into a Savvy language program—a neat little package that you get to watch pass by on-screen. It's almost a dream come true. You tell somebody what you want, they do the program and they do the program for you.

As easy as it is to set up and use, the Model Database's capabilities are considerable: 30 fields and 1000 characters per record and up to 20,000 records per file. But what really makes this base system special is the Savvy language behind the ready-to-use package. And the system makes use of Savvy's most fascinating proprietary feature: pattern recognition.

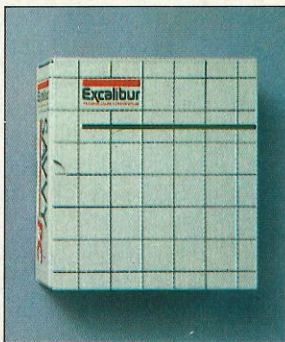
The pattern recognition procedure built into the Savvy language is what really made people stand up and notice when the language was first developed. Essentially, Savvy takes the instructions you give it, compares them against what it has seen before, determines if a pattern of some sort exists and gives you back what it *thinks* you want—a process that's been dubbed "artificial intuition."

What this pattern recognizer does to you is no more cares about misspelled or otherwise incorrect commands. "Let's design one of those" or "Design file" will do fine in place of the proper "Design a file" command. And you can even write your own commands if the plain English of the program isn't the same terminology you use around the office.

Savvy PC, while directed primarily at those in business, is a little too fascinating for just day-to-day data management. But even if you want to keep that to yourself, Excalibur gives you a lot of solid, practical reasons to use Savvy PC for exploring what the Savvy language can do for you and your productivity.

—Christopher O'Malley

For more information circle 109 on the reader's service card.



Process Your Thoughts

■ **THOR** *Fastware Inc., 200 Freeway Drive East, East Orange, NJ 07018, (201) 676-7963; runs on IBM Personal Computer, XT, Columbia MPC and other close compatibles; \$295, \$20 for demo disk; retail.*

According to Fastware Inc. THOR—acronym for THought ORganizer—helps executives and others control the massive flow of "thoughts" (facts and concepts) to, through and away from their desks. Even for numbers-oriented businesspeople who center their computing on quantitative, spreadsheet-based programs like VisiCalc and Lotus 1-2-3, THOR promises a new flexibility. Fastware believes these people need a program that blends extremely flexible file management, medium-

workflow design suits them. THOR starts with a colorful master menu numbered to match the function keys on an IBM Personal Computer. From this menu you can hit a key to go to the edit screen where you enter and edit "thoughts." You can then save your thoughts and organize them. In the categorization mode you place any given thought in up to five different categories and five subcategories—any or all

of which you can alter at will without having to re-enter other thoughts. After you've built up a data base of concepts, you can go to another menu screen to set up searches and sort through the data base. You can ask for ranges of dates and categories, and matching-text searches, with comparisons like "greater than," "less than," "equal to" and "starting with." Search results appear as a list of the first lines of the thoughts you were looking for. You can go into any one concept in its entirety and if you become confused, one keystroke will get you help for any function you want.

Normally the first thing you'll do is record a discrete idea. In the editing mode you can cut and paste, insert and delete lines, set margins and tabs and save and load files or separate ideas. All the commands show at the bottom of the screen under the margin/tabs scale, but experienced users can delete them if they prefer.

Heavy-duty word processors have about twice as many commands as the several dozen editing commands of THOR. On the other hand, lightweight memo processors have one-third as many. THOR gives you a balance: enough editing horsepower to produce almost anything you could produce on a dedicated word processor. Any text segment can be up to 6000 words long and such massive thoughts can be combined into files up to 8Mbytes long.

Other unusual features are THOR's extensive color, block graphics, foreign language and blinking-character capabilities which can make your recorded

thoughts as colorful as a Barnum & Bailey poster. The results can be used for on-screen, slide or printed presentations. THOR lets you configure your printer, if you wish, to reproduce what you see on-screen or to set up a translation table linking on-screen character attributes to whichever printer functions you choose.

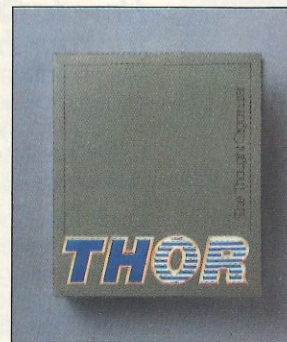
Conceptual segments can be stored, categorized and recategorized. Even if you don't categorize your entry, THOR automatically dates every one saved. You can always look for data by date, even if you didn't set up any categories of your own. Since categories and their contents can be changed independently of each other, you can modify both the substance and structure of your data base however and whenever you want. This gives THOR a clear edge over many similar programs that gain their ease of use from being extremely limited in functionality. Remember, you can search for thoughts by category, time and/or key character strings. You can make conceptual groups by specifying ranges of all these factors. Categorization and searches/sorts are both handled from menu screens. You don't have to remember anything to use them. When you gather groups of thoughts, the program shows their first lines on-screen, 10 at a time, in the order specified. You can then choose to examine or print them.

It should take about a day to get comfortable with THOR and about a week to become proficient. This makes THOR much easier to use than many data base programs and word processors of comparable power.

THOR's file management isn't remarkably fast or slow, but it isn't competing with high-end file managers like dBASE II any more than it's competing with WordStar. It's a generalist's program and judged by that standard it works. By having a look at the \$20 demo disk, you can see whether this program—or this genre of program—suits your needs. Either way, Fastware has established its originality and thoughtfulness with THOR.

—Lee Thé

For more information circle 110 on the reader's service card.



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MAKING BUSINESS DECISIONS Cdex Corporation, 5050 El Camino Real, Suite 200, Los Altos, CA 94022, (415) 944-7600; for Apple II Plus, IIe, IBM Personal Computer and compatibles, Texas Instruments Professional, DEC Rainbow; \$59.95 (Apple), \$69.95 (C/MS-DOS machines); retail or direct order.

If you're like many middle managers or small businessmen your area of expertise is probably something other than finance. You may be a good engineer, or a jack-of-all-trades salesman. In your management position where you have to make financial decisions how much to charge for a new product or whether your company should build a part or buy it. Short of getting an MBA, where can you gain some insight into making the decisions that will shape your department's, or your company's, bottom line?

One good answer is Cdex Corporation's Making Business Decisions series. Written by a professor at the Stanford Business School, Cdex's training program consists of two disks: The first disk is a tutorial that teaches you approaches to making business decisions through straightforward descriptions, examples and simple quizzes that test how well you've learned the lessons. The second disk contains templates that can be used to set up spreadsheets with Lotus 1-2-3, Multiplan, SuperCalc, or several versions of VisiCalc. If you're using VisiCalc you would buy the Making Business Decisions Using The Lotus 1-2-3 version and get that template diskette, for example.

Making Business Decisions is no substitute for business school, but then it doesn't require a five-figure investment and several years of your life. In four or two you can learn the basic terminology used in pricing, product planning and goal seeking with a minimum of effort.

Like all of Cdex's training programs,

Making Business Decisions is a pleasure to use because it is concise. This program covers a surprising number of subjects well in a compact, clear format. In typical Cdex style the course is divided in a way that allows you to review individual categories in any order and to repeat subjects and lessons whenever you want to do some brushing up.

More important than the workable Cdex format, however, is the course content. Given the relatively complex subjects covered by this program, the explanations are extremely lucid. The quizzes are paced well so that they are in themselves instructional and help reinforce the basic business concepts in the tutorial. And you have the flexibility to skip a quiz and continue with the tutorial.

The course starts with a basic discussion of ways to measure the fiscal health of your company. Such topics as return on equity, return on assets and return on sales are discussed here.

The tutorial introduces the basic profit graph showing revenue, costs and profit. This is used as a foundation on which more complicated models are built throughout the rest of the program. But Making Business Decisions does more than teach you the jargon of the business world: It teaches you how to apply the concepts to your own business.

For example, Making Business Decisions discusses two approaches to pricing products: full cost pricing and variable cost pricing. Each is explained and then applied in simple realistic examples. Then the tutorial asks you to decide whether or not to take a large order for a product at a price that is below the normal selling price. After you answer Yes or No the program shows you how managers using the two distinct strategies would likely consider the problem differently.

Similar lessons take you through product mix decisions. Should you cut back on the number of products you

carry? Would selling fewer high-priced items and many more low-priced products be more or less profitable? The interrelated subjects of quantity ordering and make versus buy decisions are also examined. Should your company build the product itself, pay for someone else to manufacture it, or make a large discounted purchase now? These considerations lead to a separate Cdex tutorial, Analyzing Financial Statements, which includes a discussion of time value of money.

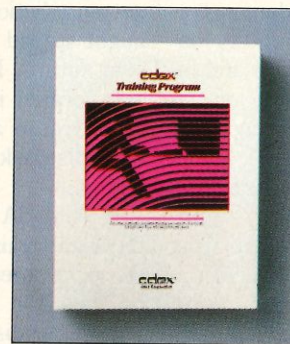
Overall, this is an effective tutorial program. The content is good and the style makes learning with the program easy and effective. I could quibble with some of the user-friendly beeps and blinking boxes, which seem childish and a waste of time, and with occasionally having to use a separate pad of paper to calculate numbers during a quiz. (I thought computers were supposed to do that work for me.) But the tutorial does what it sets out to do, and does it quite well.

My only substantial complaint about the program stems from the expectations created by the title Making Business Decisions with Lotus 1-2-3 or with Multiplan or with VisiCalc or with SuperCalc. These titles imply that you are going to be led through the implementation of business strategies using one of those spreadsheet programs. But you are not. Aside from a few references to the spreadsheets' names, none are used. In fact, there is no substantive discussion of implementing these lessons in any personal computer spreadsheet, generic or specific. Instead, the user is referred to a separate disk with templates representing some of the examples in the tutorial itself. The templates appear useful and include equations as well as basic headers for each concept, but in my opinion they do not fulfill the promise of the tutorial's title.

Still, Making Business Decisions is an effective tutorial and an efficient, inexpensive alternative to spending hours at a seminar or hunting through several volumes on management.

—James E. Fawcette

For more information circle 111 on the reader's service card.



Geoff Zawolkow
Vice President, Product Development
Advanced Ideas

Sleuthing On The Railroad

■ **AGENT USA** Scholastic, Inc., 730 Broadway, New York, NY 10003, (212) 505-3000; runs on Atari 800, 800XL and 1200XL; Commodore 64; \$29.95; retail.

In Agent USA, one of the latest releases in the Scholastic Wizware line of educational software, creatures called Fuzzbodies and a villainous FuzzBomb keep you on your toes while you ride the rails between major cities. As the American super-sleuth Agent USA, your mission is to destroy the evil FuzzBomb before it turns every American citizen into a menacing FuzzBody.

Sounds like fun—but is it educational? Says Deborah Kovacs, creative director for software product development at Scholastic, Inc., "It's definitely a game

and it's a good game, but there's a lot to learn... you're sort of unconsciously using educational tools—they're very well integrated into the overall game."

Those educational tools, she notes, include "a blend of resource management and planning and split-second decision making." In addition, Agent USA—which is targeted primarily for home use by 9- to 13-year-olds—teaches more classroom-oriented skills like U.S. geography and state capitals, according to Kovacs.

So what is a FuzzBomb? Technically speaking, it's an electromechanical device which looks something like a TV set on wheels and has the power to change unsuspecting citizens into helpless FuzzBodies—or so you learn in the information file presented to you by the Central Intelligence Bureau. Fuzzbodies are bundles of swirling energy that will render you similarly out of control should they make contact with you.

The premise of Agent USA begins with professor Elma Sniddle—an inventor and "well-known eccentric." At a time when Elma needed a power supply for the new type of television she was puttering around with, she found some glowing crystals in her backyard. She put one of the extraterrestrial crystals

into the TV set and the results were disastrous. Only you can put an end to the menace.

Included with the 16-page information file of instructions and hints, you get a small poster, some stickers, a reference card and a coated, erasable map of the United States. The reference card—showing you how to load and play the game—and the map are valuable items to keep close by.

The program begins with a short demonstration explaining the object of the game and introducing some of the things you'll encounter during your battle for an unfuzzed America. The demonstration is minimally helpful, relating some but not all of the essential information needed to play the game. The information

file and reference card are all you need. Except for his distinctive hat, Agent USA looks like an ordinary person scurrying about the train station. Moving the agent around with a joystick, you'll spend most of your time hopping trains and planting glowing crystals.

There are two kinds of trains: Local trains, which are older, and go to nearby cities and rocket trains which are newer, faster and cover great distances quickly. Getting a ticket for the train involves entering the train station—there's one in every city you can visit—and checking the schedule which appears on the screen. To make a ticket selection, you have to type in the city and state as it is written on the schedule. Ticket in hand, you find your way back to the station platform and wait for your transport.

Waiting for your train to arrive is not idle time; it's time for "growing" more crystals. Crystals are the diamond-shaped objects which, you should remember, fell from outer space (presumably) into Elma's yard. Agent USA uses these crystals to turn FuzzBodies back into normal people, to keep himself from being transformed into a fuzzed state and to eventually disarm the rotten FuzzBomb itself. You are

given 10 of these crystals to start, but you can "plant" some of them in the joystick button and reap the rewards as they multiply. You'll have to work and efficiently for a good harvest. You need 100 crystals when it's time to take the dreaded FuzzBomb.

The thing that gives you your perspective is the Infobooth, where you drop in to get the latest information updates. You can see where you are on the map, where the FuzzBomb is, get a prediction as to where the evil might spread its reign of terror in the near future. Infoboosts, however, are only located in state capitals—a nice incentive to finally remember places like Bismark, ND, and Montpelier, Vermont.

Agent USA is entertaining and takes the right trains to the right places at the right times with the right amount of crystals can be very challenging. James Bondish suspense theme beats away while you're on the train, also a comic relief. And the graphics you would expect in a game written initially for Atari and Commodore machines (Apple and IBM versions expected this summer), are good. There are few problems with Agent USA as a game.

But is Agent USA educational? So how, viewing the hoarding of crystals as resource management, smacks of the "hand-eye coordination" argument for endless hours of Pac-Man. There is merit, to a degree, in the viewpoints, but they stretch the beleaguered educational label too far.

Agent USA, to its credit, does a good job of familiarizing a youngster with U.S. geography—at least as far as states and their capitals are concerned. You have to know the physical relationships between states and major cities to get around the game with any sense of order. But there's probably more here than anything else. And there's nothing wrong in having an investment of three hours and there seems something odd about \$9.95. The second, a 15-hour, four-spoonful of sugar helping the medication go down. But as long as you know what you're getting, it's a fairly good deal. \$249.95, 60-hour course with nine hours awaiting you in Agent USA.

—Christopher O'Malley

Improving SAT Scores

■ **OWLCAT** Digital Research, 160 Central Ave. Pacific Grove, CA., 93950, (408) 649-3896; runs on IBM PC and Cjr., Apple II and IIe; \$19.95, \$89.95 and \$249.95.

SAT test scores can determine whether a high school student gets into the college of his or her choice. But can a package like the Owlcat SAT Preparatory Course help? Some commercial packages promise improvements on the order of ten percent in the 200 to 800 SAT score range, but not Owlcat. Beth Newberger, President of the Owlcat division of Digital Research, says she could be confident of such increases if she could monitor a student's use of their package, but lacking that, so much depends on the student's motivation. So why should you bother with the Owlcat course? Because if any software package is going to hold the attention of students long enough to have a chance to improve their scores, it's going to be one that's as easy and fun to use as Owlcat. Moreover, both the content and method of presentation are based on research, educational theory, and a bit of magic final ingredient: a bit of fun. Working with the software after observing what students actually did with the first versions of the program.

One feature that immediately distinguishes the Digital Research offering from other SAT preparatory software in the market is the range of packages: there are three, each requiring a different commitment of time and money. The least expensive—a single-disk diagnostic test that predicts a score for math and verbals section of the SAT tests while isolating a student's strengths and weaknesses—requires an investment of three hours and \$9.95. The second, a 15-hour, four-spoonful of sugar helping the medication go down. But as long as you know what you're getting, it's a fairly good deal. \$249.95, 60-hour course with nine hours awaiting you in Agent USA.

Standard Written English (used by

some colleges to determine which entering freshman must take the most basic English course, known in the vernacular as Bonehead English). This three package offering intermeshes. A student might buy the diagnostic package, score well, and decide to forego tutoring, while others may use the diagnostic results to decide if the 15- or 60-hour course is more appropriate. And it is nice that those to whom \$250

and 60 hours seems a steep price to pay have a course of moderation to follow.

Owlcat went to several high schools with student body SAT averages that consistently rank in the top five nationwide to determine how those schools prepare their students for the tests. That study strongly influenced the

vocabulary lists and mathematical problems used in the program. All told there are some 3000 vocabulary words and thousands of verbal and math questions.

Just as important as the basic raw materials that go into an SAT tutorial program is whether the program fully utilizes the computer's potential as a teaching tool, according to Newberger. Much of that potential lies in imbuing the program with the strategies of an endlessly patient, supportive instructor. "Many of the SAT programs are simply translations of textbook to the computer screen," she says, "others no more than electronic flip cards." Owlcat strove for a bit of enlightened interactivity to overcome that first potential shortcoming—the program offers encouragement even when you miss a question, drills you on questions you miss until you get them right, and presents answers in random order to prevent students from memorizing the position of the correct answer instead of reading and learning the answer itself (this last wrinkle was added after watching early users of the software). As to the second shortcoming, Newberger says the involvement of top-flight educators in the program's creation guaranteed from the start that

Owlcat's software would be more than a set of electronic flip cards.

The Owlcat package uses the proven method of presenting, drilling, and then reviewing the material, with the goal of teaching the material instead of merely drilling the student on SAT-type questions. This philosophy explains why the software spends so much time on synonyms, when every vocabulary question on the SAT involves choosing an antonym (a word opposite in meaning) to a given word. It makes sense: the only way to identify a word as an antonym of another is to know the definition (or synonym) of both words in question.

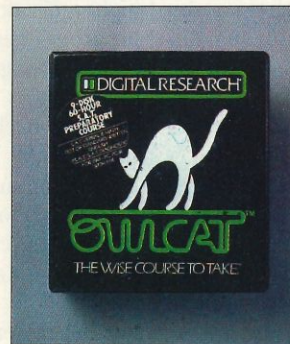
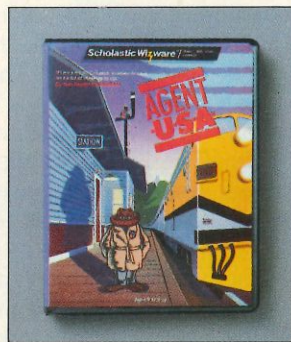
The teaching approach is layered several deep to accommodate the needs of different students. If the pretest indicated no work was needed in a given area, for example, the student could go straight to the drill section, bypassing the learning lessons. Even then, when a question is missed, a clear explanation of the answer is available from the computer keyboard. If still more detail is needed, an electronic manual plunges the student into a lesson on the topic with just a few keystrokes. Finally, for areas of real weakness, the three-ring bound manual provides reviews of the material covered on the SAT.

One of the most useful sections coaches the student on test-taking techniques, including a method for determining when to guess and when to leave a question blank. Moreover, the student gets an idea of proper test pacing—and becomes accustomed to time pressure—from the "Times-Arrow" clock feature of the drills.

But can this package, or any software package, actually improve a college-bound student's SAT scores? The position of the sponsoring body of the SAT test, The College Board, is that cramming, defined as SAT-specific preparation of between 2.5 and 25 hours, does not improve scores. Longer term study of a substantive nature—a label that fits the 60-hour Owlcat program—does seem to have an effect, says the Board, which makes the 60-hour version seem the way to go.

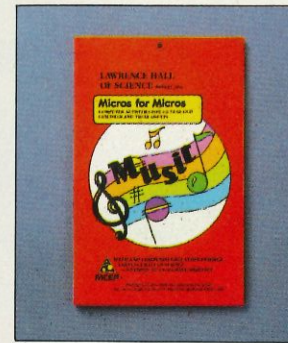
—Kevin Strehlo

For more information circle 112 on the reader's service card.



Computer Insight For Kids

—Jim Keogh



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Most people have never really figured out why they bought a home computer. That's because most people have never figured out what their home computer can really do. There's more to it than balancing a checkbook or zapping aliens.

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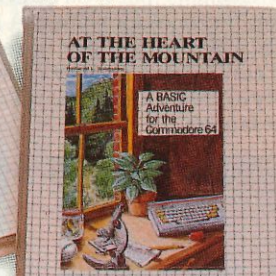
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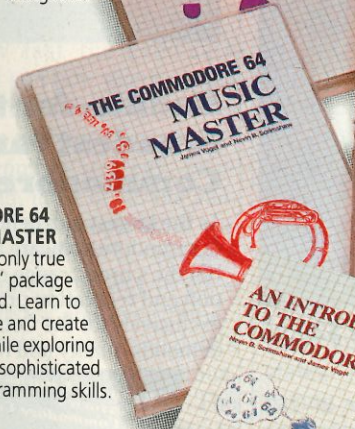
AT THE HEART OF THE MOUNTAIN
This package teaches children and adults to program in BASIC by involving them in a fascinating adventure story. Join the characters in a journey of discovery as they too learn about computers for the first time.



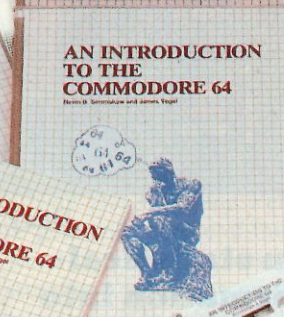
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Using specific examples, this is an adventure-based package that goes beyond the traditional BASIC introduction.



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This is the only true "teaching" package of its kind. Learn to compose and create music while exploring sophisticated programming skills.

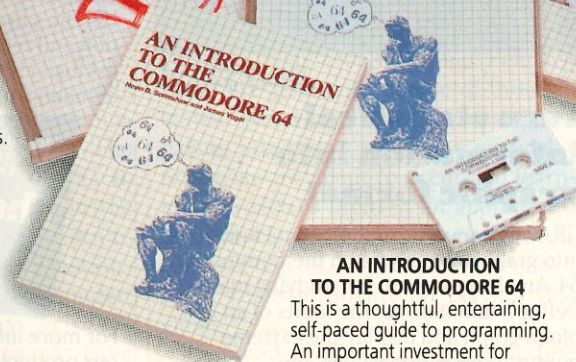


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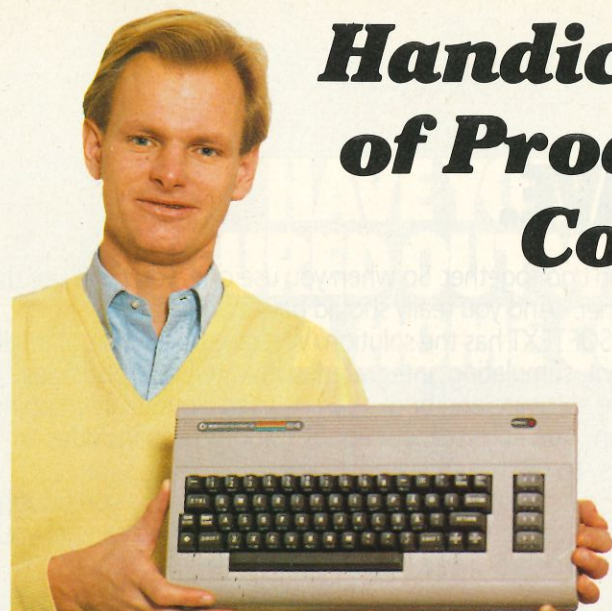
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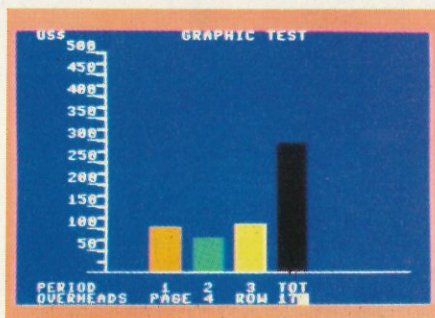
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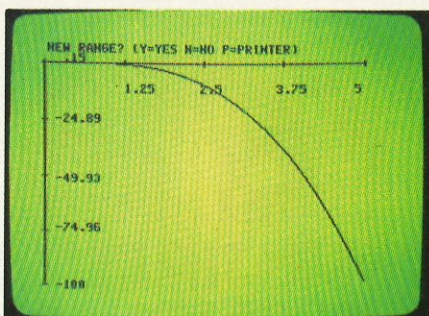
Addresses, telephone numbers, appointments, birthdays, or records—whatever you want to remember—put it on DIARY, an electronic notebook for home use. DIARY comes on a plug-in cartridge. It's easy to use and easy to learn, giving you the flexibility to design a personal calendar or address book.



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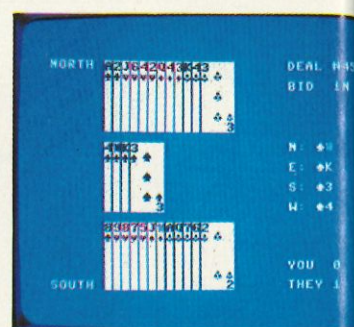
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For more information and a catalogue of our products, see your nearest Commodore dealer, or call us direct.



Handic Software, Inc.
Fellowship Business Center
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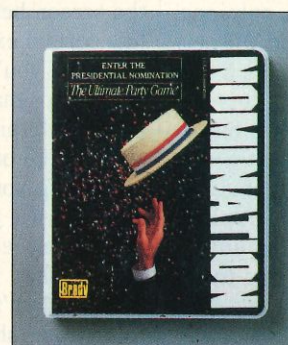
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The Ultimate 'Party' Game

NOMINATION The Brady Co., Routes 9 and 187, Bowie, MD 20715; (800) 8-0220, (301) 262-6300; runs on IBM Personal Computer; \$29.95; retail.

Classifying a game as the ultimate in party entertainment is a hard thing to justify—especially with the kinds of games some people play at parties. But, assured: The Brady Co., makers of the player in a different kind of atmosphere—the return to that deal, and test your skill with a different strategy.

Whether you're an experienced bridge player or a beginner, polish your skills with BRIDGE 64. Plan the game with BRIDGE 64. Play North-South, then switch to East-West—the same deal, the return to that deal, and test your skill with a different strategy.



As the largest independent developer of Commodore software and accessories, Handic's broad range of business, education and recreation products are designed exclusively for the Commodore user. The program acts as the candidate's press agent—sometimes obnoxious, sometimes sneaky, always loyal. The press agent/program uses prompts to the player what's going on in the game, but the candidate has to learn to handle the press's pointed questions dealing with real world issues—hunger, employment and nuclear crises—the dignity and grace we have come to expect from our real candidates. The candidate is given exactly 10 seconds to respond to these questions by picking one response from a menu of five, so a quick mind is an essential quality.

Feedback on the responses is provided through news stories reporting the immediate reactions of voters after each candidate's press conference. For example, in response to the question, "Should the Social Security

system be made optional?" and "How can we best stop the illicit drug trade?" my candidate replied with choice A for the first question, "I think every person has the right to determine his own retirement plan," and C for the second, "Legislate stiffer prison terms." These responses were received favorably by the people who were polled after the news conference. They said the answers "were acceptable and what was expected of this particular candidate."

How the candidate replies to the press and builds a political platform will ultimately affect his or her performance in the primaries, not to mention how much money he receives from his supporters. From judiciously doling out campaign funds to reading the political climate, the player must be able to react as the real candidates would in the same situation. For example, in the instructions, all 20 primary states are listed with the number of delegate votes allotted to each as well as how the state usually votes—Massachusetts and California are traditionally liberal states while Iowa and Missouri usually vote conservatively and Ohio and Pennsylvania are generally middle-of-the-road states. Knowing these circumstances, paying attention to them as particular primaries are about to occur and learning to react to them in an appropriate fashion can only help a candidate's chances. All of these features lend a more realistic quality to playing this game.

I played Nomination quite a few times, mixing up the circumstances as I went along. I played against the computer's four candidates (Alan Cranston, John Glenn, Gary Hart and Walter Mondale on the Democratic side and Ronald Reagan, Jack Kemp, Robert Dole and Howard Baker on the Republican side), with a couple of my co-workers and the computer's candidates, and with five of my own candidates.

I tried varying the backgrounds, platforms and positions of the candidates I

and my co-workers controlled and came up with some interesting conclusions. It was obvious that the climate in this country—or in this country as the program portrays it—leans toward the Conservative side.

The program's documentation consists of a 10-page booklet. No tutorials are required—everything the player needs to know is either explained by the program itself or quickly discussed in the instruction booklet.

Nomination is extremely easy to use—you can start playing immediately. After a quick read through the booklet, the player is basically asked to master the use of only two keys on the IBM Personal Computer keyboard (the Return or Enter key and the End key) plus the number keys across the top.

While this game is a lot of fun, it has a somewhat obsolescent format—after all, at the time of this writing, both John Glenn and Alan Cranston had already dropped out of the race for the Democratic nomination. The only solution to this problem is to either play as if all the candidates still had a chance at the nomination or to always play with your own five players.

The game makes good use of color (especially red, white and blue) and it begins and ends stirring with some familiar campaign music, "Happy Days Are Here Again." It even displays some of the humor that must be involved in the real race for the nomination. For example, after giving your vital statistics (height, weight, sex, education and nationality), the program, like any good press agent, wants to take your picture for distribution to the newspapers. It asks you to lean toward the computer screen and smile. A little closer. Suddenly, the screen flashes (like a flashbulb), your picture is "taken" and you move along in the game.

There's a lot to be learned from playing Nomination—issues that go beyond this year's Democratic and Republican National Conventions. Political buffs (and hopefuls), as well as students of government will be able to test their savvy and know-how as they find out what it takes to win in the political arena.

—Elli Holman

A Game For Landlocked Seamen

■ **REGATTA** Howard N. Sams & Co., 4300 W. 62nd Street, Indianapolis, IN 46268 (317) 298-5400; runs on Apple II Plus; \$29.95; retail.

If you've ever sailed a small boat, you'll probably enjoy Regatta from Howard N. Sams & Co.

If you've never sailed any kind of sailboat, I'm afraid that you'll probably become discouraged and give up.

I've been sailing small boats for 10 years and I had to use a lot of what I know about sailing to make this game program work. It seems to me that someone who doesn't know how a sailboat moves relative to the wind will have a terrible time with Regatta.

But I'm getting ahead of myself. Regatta is a sailing game for one or two players. The object

of the game is to complete a typical triangular race course on a lake in a small sailboat in the minimum amount of time. The boats are drawn in high-resolution graphics on the screen and move about the screen in response to your commands to control the rudder and the sail. To make the boat move you have to know how the wind is moving in relation to the boat so you can set your sail to catch the wind properly.

That's where the information display on the bottom of the screen comes in. There's an apparent-wind indicator that gives all the wind indication you need. There's also a heel indicator that tells you how much the boat is tipped. And, finally, a small diagram tells you the sail angle and rudder angle. There are identical information displays for the two boats on the lake and a race clock appears in between the two displays.

Before you get to the race, you can go through an on-screen tutorial. You don't have to, because the tutorial is well covered in the documentation, complete with screen photos. It tells you how you control the rudder and the sheet. (The tutorial says the "sail," but any sail is controlled by a sheet, a rope that you pull in or let out to control the position of the sail.)

When you boot this program, you get a nice title screen and then a main menu. Choosing the tutorial from the menu takes you through that. I recommend reading the user's manual and just getting right to the race. You'll be asked whether you want paddle- or keyboard-control for the tiller (which sets the rudder angle) and then you'll see a drawing of the four possible race courses. You pick one, then decide

how many boats will be racing. If it's only one, the second boat will stay at the dock. Then you wait a few minutes and the lake appears on the screen, complete with dock, two boats, the information displays and a clock counting down 20 seconds to the start of the race.

Sounds simple so far, right? Wait!

In those 20 seconds before the race begins, you have to figure out which way the wind is coming from. You have to do that from the apparent-wind indicator, because there's no true-wind indicator. Let me explain that: True wind is the way the wind is blowing. Apparent wind is the way the wind blows with respect to the movement of the boat. Apparent wind is the vector sum of wind velocity and boat velocity. When the boat is standing still, true wind equals apparent wind, so you can see which way the true wind is blowing. Once you start to move, you can't. The apparent-wind indicator is misleading, too. There's a small line that moves around an anchor point that's at the apex of a V in the wind indicator. The trouble is that you tend to think of the V shape of the bow of a boat, but this V opens toward the bow, not the stern. It's just backwards and it takes some getting used to.

Anyway, you have to figure out where true wind is because you have to set your sail to catch it or else your boat will sit at the dock. That's what happened to me on the first race I sailed. I sat at the dock until I figured out what was going on.

Once you finally get moving, you

have to set sail and rudder to sail around the course. There are markers on the course and you have to sail to the outside of each of the markers. You have to set sail and rudder together or else you'll lose speed. There's a wind-speed indicator and a boat-speed indicator in the same box with the indicator. You try to set your sail to make the boat speed as fast as possible without capsizing.

Oh, yes, capsizing. The little boat on the screen behaves like a real sailboat to a certain extent. If your sail isn't set properly, you'll turn over.

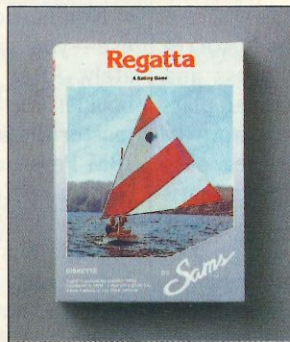
It's here that I have my biggest complaint with this program. In real sailing, you feel the boat start to go and then you can do something about it. On a computer, it just goes. In a real boat, when you feel her start to go, you quickly shift weight outboard to keep her. You can't do that in this program. This makes sheet control and tiller control even more critical than they are in real life.

I do like the fact that no one is claiming that this program will teach sailing. This program is for fun. The authors, both sailors, wrote this program simply because they like sailing and computers. I like them both, too. I guess that's why I like this program.

Still, I don't think everyone will like sailing. Sailors will no doubt find the discussion of sailing in the user's manual informative, but it can't give you the feel of a boat, nor, I think, tell you enough to make you an expert sailor. That is partly true, but the image quality can't match hand-drawn images. In fact, that's the program's main shortcoming. Though the quality of the images is not as good as typical computer game images, beat my record. (Every time you boot there's a very nice little ceremony on board. It's very gratifying to the reader.) The program is a lot of fun.

For those of us who are landlocked during the long, cold winter, this might help when spirits get really low by delivering a pleasurable simulation of summer sailing.

—David G.
For more information circle 115 on the reader's service card.



Creating Your Own Cartoons

■ **MOVIEMAKER** Reston Publishing Co., Inc., 11480 Sunset Hills Rd., Reston, VA 22090, (703) 437-8900; For the Apple II series, Atari 800, 1200, 400XL, 1450XLD, and Commodore 64; \$60; retail.

Have you ever dreamed of becoming the next Walt Disney? Imagine the creator of Mickey Mouse as he watched over the invention of those thousands of images that delighted moviegoers and attracted the capital for Walt Disney World and other elements of his giant entertainment empire.

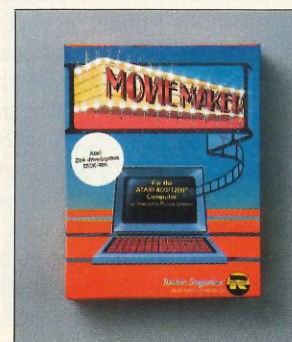
Now you can imitate Disney's craft—though not match his port-folio—on your own screen or monitor. At the least, according to Reston Computer Group, you can share the excitement of creating fanciful screen images with Movie-

Maker, a do-it-yourself cartoon maker. This system lets you create animated characters that scamper across the screen, jump into the air, turn around, and dash back and forth. Special commands allow you to speed up the action, change the color of the background, and determine the number of times an animation sequence is repeated.

This system lets you do with a computer what an animator does by hand," says Debbie Bunch, software product manager at Reston. That is partly true, but the image quality can't match hand-drawn images. In fact, that's the program's main shortcoming. Though the quality of the images is not as good as typical computer game images, beat my record. (Every time you boot there's a very nice little ceremony on board. It's very gratifying to the reader.) The program is a lot of fun.

For those of us who are landlocked during the long, cold winter, this might help when spirits get really low by delivering a pleasurable simulation of summer sailing.

—David G.
For more information circle 115 on the reader's service card.



pose an animation sequence; to record a sequence you've created; to smooth a selection (necessary to remove the jerky motion of the animation); and to play the finished product.

According to Linda Mittel, software supervisor at International Picture Systems, which created the program and licensed it to Reston, "The program is set up to simulate a videotape machine—you record a series of im-

ages and then play them back." But the problem with that process is that you have to constantly shift back and forth between menus, options, and even disks, which can be frustrating, especially if you have only one disk drive.

To start making the movie, you select Compose from the main menu. The software

then allows you to get a file from its library of shapes. Your choices include dogs in various attitudes—running, turning, and leaping—as well as creatures from an extraterrestrial world and human figures costumed in period clothing. You also have files with sounds and you can create special backgrounds for your figures. You choose one of the prerecorded shapes files and a screenful of shapes—dogs, aliens, people—appears.

Your next step is to put the shapes of your choice into a sequence. At the top of the page is a blinking rectangle that moves from shape to shape under the control of a joystick. You pick the shapes you want for a sequence—up to 16 different ones—and, after saving the work, go back to the menu and record it.

You follow the same process to create your own shapes. In the Compose mode (with no shape file loaded), you use five commands: P for Pen, a command for drawing; Z for Zoom, which lets you view shapes close up; W for Window, which lets you duplicate and move shapes around on the screen; O for Outline, to transform a drawing into a defined shape; and B for Border, which lets you alter the size and shape

of windows and outlines used in drawing, assembling, and duplicating the shapes you've created.

You start drawing by selecting P and a number from 0 to 3, which indicates the pen color. A blinking cursor—the pen cursor—appears on the screen. It moves in response to the joystick or arrow keys. You can change the size of the work space with the Z command and stretch the outline of the drawing with the joystick. If you don't like what you've done, you can erase the whole thing by pressing E for Erase.

One of the most powerful features of the program is its ability to copy and combine shapes. You put a window around the shape you want to duplicate, press D for Duplicate—make a copy—move it to another location and press O to deposit the image there. You can repeat this process many times—to make an entire forest, for instance.

The documentation, which for the most part is clearly written, says, "the first step in creating a movie is to decide what story you want the movie to tell." Accordingly, you are advised to keep a separate log of the movie as you create it. The log should tell you which shapes and figures are stored in each file. It should also list your sequences, backgrounds and sounds and tell you where they start and stop in each frame.

When recording, you can make some modifications. You can put the image you've created in three different locations—three dogs in different places on the screen, for instance. You can change the number of frames that each shape is held on the screen, and the number of times a sequence cycles while being recorded.

After you're finished recording, you run your creation through the smooth function and play it back for review.

MovieMaker adds the dimension of time to computer graphics, rough though it is. And as Interactive's Linda Mittel says, "What you previously had to have a huge computer to do, you can now do on a desktop." MovieMaker is a step in the right direction.

—Charles A. Miller
For more information circle 116 on the reader's service card.

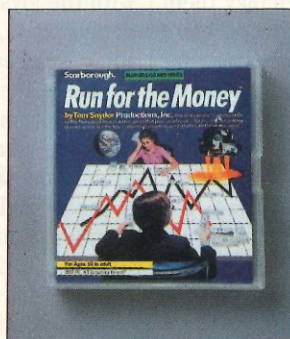
Test Your Business Skills

■ **RUN FOR THE MONEY** Scarborough Systems, Inc., 25 North Broadway, Tarrytown, NY 10591, (914) 332-4545; runs on IBM Personal Computer; \$49.95; retail and direct order.

Run For The Money from Tom Snyder Products, Inc., is designed to be fun. However, the game is based on some of the basic economic principles used in running a business.

What is Run For The Money about?

Two Proto-Ruf Ships each carrying a Bizling have crash-landed after flying through a zinger storm. The zingers removed all the paint from the ship's protective shield. You and your competitor (fellow player) are Bizlings or space travelers in search of business. You have little cash and need



more money to purchase the paint for your protective shield. You acquire the funds by producing synnans aboard your ship and selling them to the Simians (the people who live on the planet on which you landed). But before you can manufacture synnans (synthetic bananas) you have to purchase raw materials called rufs from the Simians.

You can use various tools to help you make a decision on pricing. These include profit graphs which show you the number of units sold, your price, the number of rufs purchased, the cost per ruf, the cost of advertising and of course your profit. Then there is *The Simia Weekly* which is a newspaper that tells you about upcoming events on Simian that may affect your synnanna business. Furthermore, there is a What If Prediction Machine that shows you what you did last week and predicts what could happen in the coming weeks.

You play against an opponent who, like you, must purchase sufficient paint to get his/her ship ready for launch from the planet. When you purchase a bucket of paint, the computer automatically reduces the amount of cash you have and permits you to return to your ship and paint it using your anten-

na as if it were a paint brush.

If the game sounds a bit complicated, it is. Run For The Money isn't the type of game you can boot and play within a few minutes. Plan on spending some time studying the 32-page instruction manual before you power up your system. And it would help to spend the next 15 or 20 minutes reviewing the tutorial contained on the program disk.

The tutorial is designed to give the required information. Each segment of the tutorial shows you a screen which you will find as part of the game. The text beneath the screen describes the segment. However, you are given a choice as to whether to proceed to the next segment or have the computer go into more detail about the displayed segment.

The tutorial can be used as a quick review and as a replacement for the software documentation.

With this preparation completed, you're ready for launching into the world of business in space. Although the software offers three skill levels, you'll need to play a few games at the beginner's level before you start to catch on and make enough money to successfully launch your spacecraft.

Once you've settled down with the fundamentals of the game, you soon get caught up in charts and spreadsheets and using the laws of supply and demand to place your business in a more profitable position. You can even find yourself in collusion with your fellow players against the Simians.

The documentation prepared by the authors of Run For The Money attempts to satisfy your immediate needs. This spiral bound booklet begins with instructions needed to boot the program and get you directly into the game. Then you normally require a quick overview of the game, so, using a series of cartoons, the authors describe it. The remaining pages are devoted to providing a closer look at the game using cartoons mixed with concise text.

However, the cartoon approach to

documentation is difficult to get use even though the text beneath each cartoon is sufficient to teach you how to play the game.

Does the game give you insight into the conduct of business? The authors succeeded although it would have been better had the situations depicted been more real. Doing business in space, according to the authors, is the same as doing business on earth. But clearly there would be a greater impact if the game's particulars were common to life found on earth. It would be more meaningful and easier to learn.

Many of the other simulation games on the market keeps in touch with reality. This basic factor in the underlying theme helps to enrich the learning experience for most players. How about using a truck or a manufacturing plant? These are familiar items that everyone knows something about and could add to the realism of a business-oriented simulation.

Run For The Money also has another drawback that occurs when two people play the game. The authors require players to share the keyboard while controlling their Bizling. It's a problem unless one player is right-handed and the other left-handed.

It is not necessary for two people to play the game. One player is sufficient. However, you will be losing out on some of the fun—especially the windowing and dealing that goes on to discover the Great Lakes, the Mississippi River and the Amazon. And during your travels, you'll have the opportunity to discover the Great Lakes, the Mississippi River and the Amazon.

To date, Run For The Money is available for the IBM PC with graphics board, but a spokesperson for Scarborough Systems, Inc., the distributor for Tom Snyder Productions, Inc., says there are plans to translate the program to the Apple IIe, Atari and Commodore computers.

Run For The Money is interesting and fun to play even though there are some general business strategies that help you brush up on business techniques that you may have learned in the classroom. And even though you may not be turning a profit, you have a lot of fun trying to manufacture and market all those synthetic bananas.

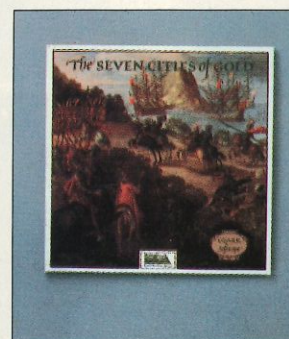
—Jim Ke

Exploring The New World

■ **THE SEVEN CITIES OF GOLD** Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403, (415) 571-7171; runs on Atari; Commodore; Apple II+, IIe (end of summer); IBM PC, PCjr (in future); \$40; retail and direct order.

Where most fantasy/adventure games are products of the imagination, The Seven Cities of Gold from Electronic Arts is based on historical fact.

During the player's 16th century Spanish conquistador in the New World, the game is infused with details that make you feel as if you were there with Cortez and Ponce de Leon. The musical theme accompanies the evening screens is authentic—written by a 16th century Spanish composer.



Set in the years 1492 to 1540, The Seven Cities of Gold gives you an explorer's eye view of that time period—the terrain the explorers traversed and its inhabitants.

You begin the game by purchasing supplies and recruiting laborers before departing. Using real latitudes and longitudes, you'll navigate via joystick the direction of the Americas.

During your travels, you'll have the opportunity to discover the Great Lakes, the Mississippi River and the Amazon. And when you've found land, you can search for hidden gold mines and seek out 200 native settlements which are based on actual settlements of the 16th century.

Your goal is to return from these new lands with a fistful of gold and some hand-drawn maps detailing your discoveries.

On-screen, the program shows a window which moves over a large map you direct it with the joystick. At sea, you'll watch your ship sail the ocean; on land, your men will be traversing the terrain.

When you come across a village, the program will zoom in for a closer look. Here you'll encounter the natives. It's up to you whether you want to treat

them as friends or foes. You can choose to leave them gifts, amaze them with your trickery, try for a trade or attack.

While attacking may not be the smartest thing you can do, it does show another unique facet of The Seven Cities of Gold, by putting you right into the arcade game mode. Your men can mow down the savages just by touching them—you don't have to shoot bows and arrows.

The lack of scoring in this game may come as a surprise. You don't get rewards for killing the natives. In fact, quite the contrary: The point is to determine what kind of interaction you will instigate with the natives you encounter. If you woo them, you'll have a village you can safely return to later. If you conquer, you can

take all their gold, but you've made an enemy. And beware: Among certain tribes, news of your behavior will precede you to the next village.

While I enjoyed entertaining the options of amaze, trade, gift or attack, I would have preferred to make my selections from a menu. I found the arcade business tiring. Fortunately, it doesn't last very long (though you must endure it for each village you visit). Perhaps if I had fared better, I wouldn't be so disappointed.

The natives I ran into stubbornly refused to trade. I never seemed to have enough goods to leave as gifts, so my only option was to fight them—exactly what I didn't want to do. As for the graphics, the men on screen were little more than stick figures. I'd prefer it if the arcade action was dropped.

But back to the journey. Along the way, you'll need to keep a close eye on the date (always displayed at the top of the screen) and your food supply. The two are closely related. Time passes as you make your moves and your food supply dwindles with each passing month. You can replenish your food in the New World, but food availability depends on the time of year and your location (northern locales, for example,

have shorter harvesting periods, hence there's less food available).

When you're finished exploring—whether you're nearly out of food, laden with gold or just anxious to return home to a glorious welcome—you can set sail for Europe. But first you have to find your ship. In your eagerness to start your adventure, it's easy not to note exactly where you left the ship. The computer will build maps for you as you go. It's important to consult them.

Assuming you remember where you left your ship, your troubles still may not be over. Your crew may have become tired of waiting for you and set sail without you.

Once you are back in your civilized homeland you can run straight to the palace to collect any honorary titles the court may have bestowed upon you. You can also stop by your house for a running total on how much of the New World you've discovered.

If you tire of the historical game—after all, you *know* where North and South America are and you may find it less challenging after a while—The Seven Cities of Gold offers an alternative. It's an option called the random continent generator and it does just what it says: It randomly creates continents for you to discover and explore. All the continents are based on real geographic principles.

It's choices like this that give this game a freshness and durability that's rare in entertainment software. In addition to the historical/random continent generator option, you can select your own level of difficulty. And you can copy a disk for a friend so you can compete and see who reaches the highest rank and has the most gold by the year 1540.

Electronic Arts tried to make the game as intuitive as possible. Play is controlled entirely by joystick. Moves are well-prompted. Menus pop up at the right times.

The game is easy to learn and simple to use. The manual is short, pleasant to look at and sprinkled with historical facts that add to the flavor of the adventure. The Seven Cities of Gold takes you back to another era. If only it weren't for those feisty Aztecs...

—Lynn Walker

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- 12/ **INFOTAR**; MicroPro; Apple, IBM, MS-DOS, DEC, TI, TRS-80, CP/M; \$495
- 13/ **STATE OF THE ART**; State Of The Art; Apple, IBM, MS-DOS, DEC, TI; from \$495 to \$895 (General Ledger, Accounts Receivable, Accounts Payable, Inventory Control, Payroll), from \$395 to \$795 (Sales Invoicing), from \$395 to \$795 (Budget & Financial Reporting), \$795 (Professional Time & Billing), \$495 (Bookkeeping), \$395 (Word Processing)
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- 15/ **R:BASE 4000**; Microrim; IBM, DEC, TI; \$495

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- 15/ **KNOWLEDGE MANAGER**; Micro Data Base Systems; IBM, MS-DOS, DEC; \$500

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- 3/ **ZORK III**; Infocom; Apple, IBM, Atari, Commodore, TRS-80, TI; \$49.95 (TI Professional), \$39.95 (others)
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- 5/ **ZORK II**; Infocom; Apple, IBM, Atari, Commodore, TRS-80, TI; \$49.95 (TI Professional), \$39.95 (others)
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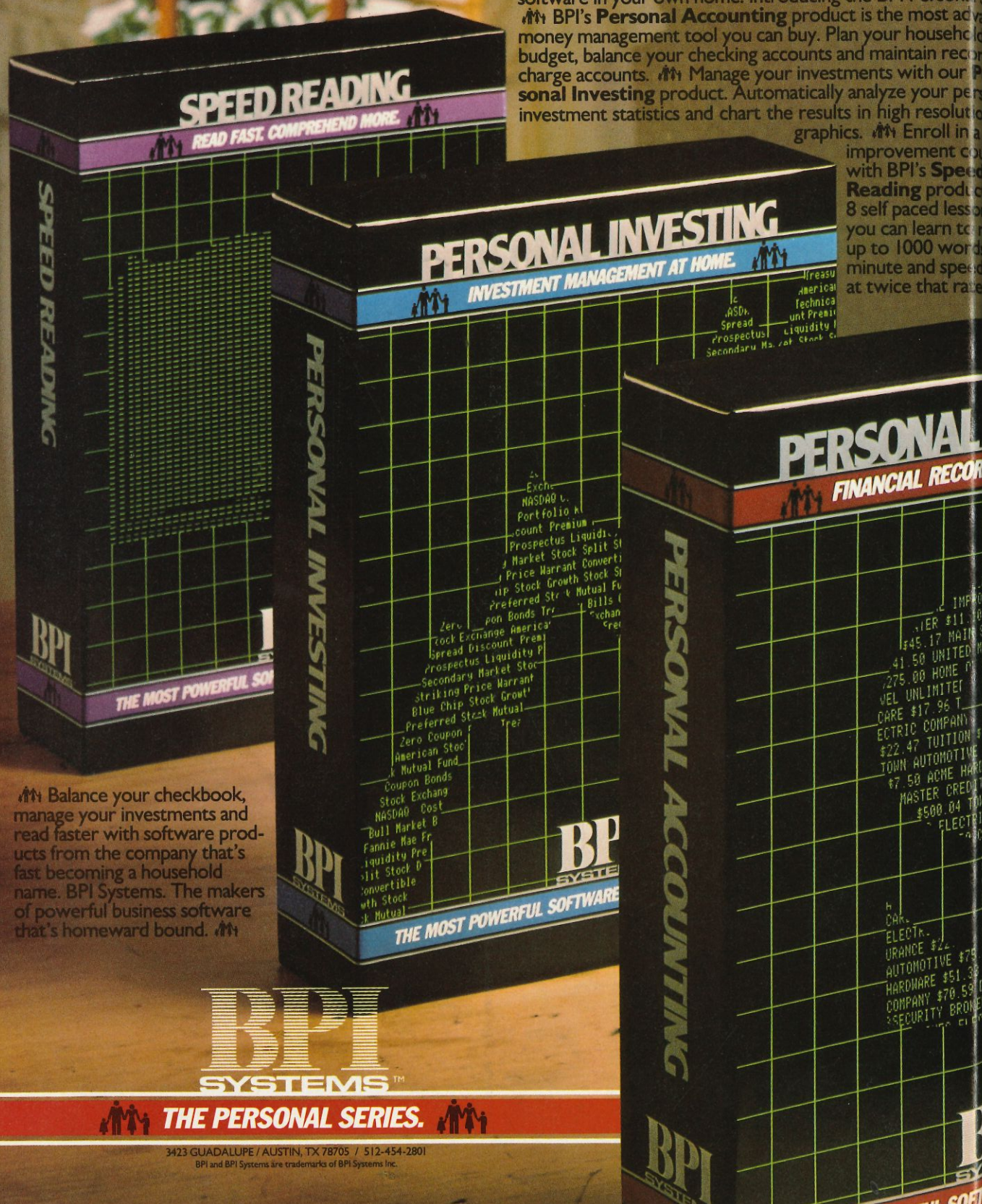
J U N E • 1 9 8 4

'TEST DRIVES'

AS the name implies, these are in-depth demonstrations of some of the significant programs on the market. In this issue, we give you a step-by-step walk-through of five packages with a user's perspective of the functions and the power of these programs.

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WORDSTAR 3.3 MicroPro International Corp., 33 San Pablo Ave., San Rafael, CA 94903; (415) 499-1200; 350; runs on IBM Personal Computer and compatibles, Apple II, IIe, P/M-based and most other personal computers.

Looking at word processing packages for personal computers is like reviewing movies. When you review a Western, you measure performances against the standards established by John Wayne, a drama against the performances of Spencer Tracy and Katharine Hepburn and you compare slapstick comedy against the Marx Brothers. In word processing, programs are measured against WordStar, a five-year-old package developed by MicroPro International Corp. that is by far the largest selling program of its kind.

Even in its earliest versions,

Working With The New WordStar

The powerful features of WordStar are made more accessible in a new version that incorporates improved documentation and easier installation procedures.

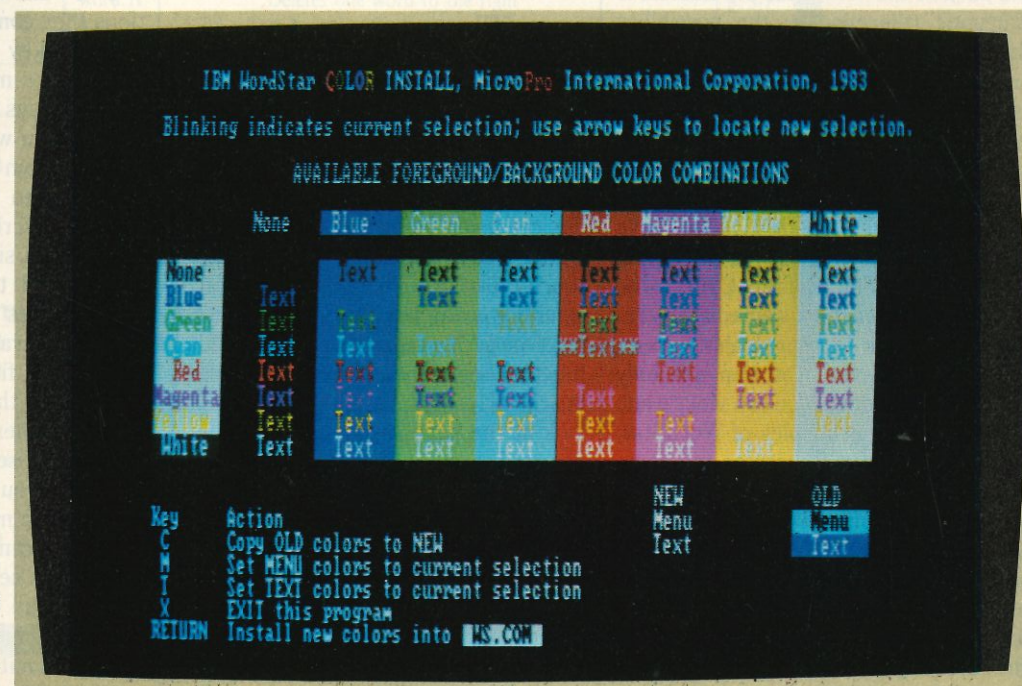
WordStar was a powerful program, but its power was bred of the kind of complexity that made the package very difficult to use. Other software companies have tried to reduce those difficulties by adding overlays of features such as a mouse controller, but the difficulties remained. With the advent of the latest version, WordStar 3.3, it is clear that MicroPro has taken to heart the constructive criticism aimed at WordStar over the years and has corrected many of the program's faults.

The most noticeable improvement is in the documentation. The manual for previous versions of WordStar read like the Russian-language version of *War and Peace*, whereas today's user gets an excellent, well-edited manual with both tutorial and reference sections.

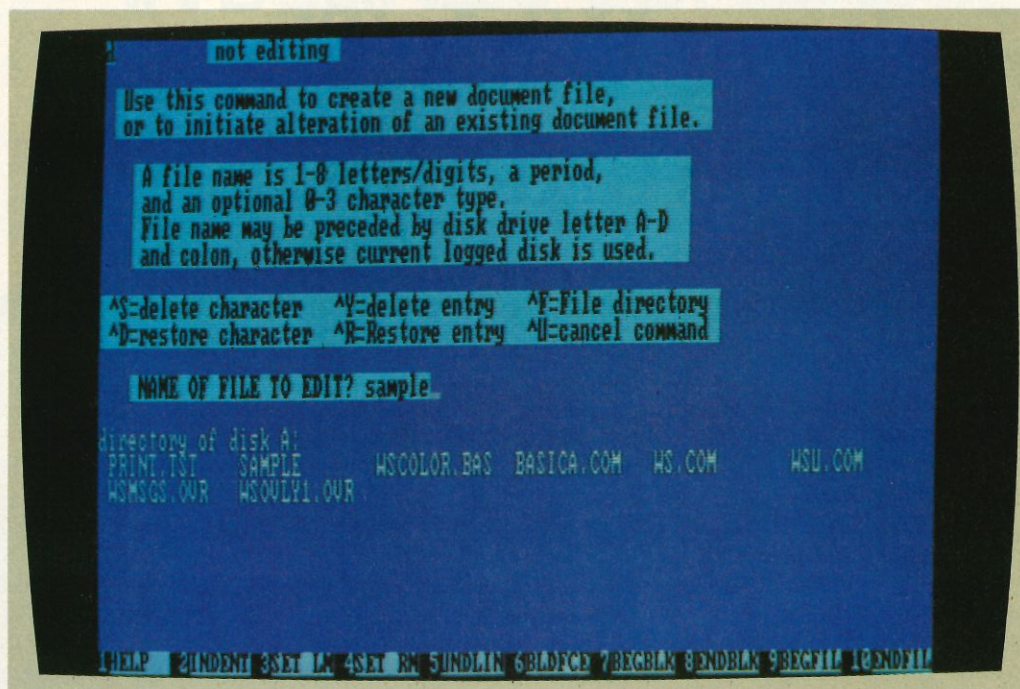
The second ordeal faced by WordStar pioneers was modifying the software to fit the hardware they were using. Now,

assuming you are using an IBM Personal Computer or compatible, there is very little to configure. You reach the installation program by typing "WINSTALL" from the installation menu. If you type "WINSTALL WS" you circumvent the question of which MicroPro product you are installing. After loading the uninstalled WSU.COM from the disk, you are given a menu of menus, much like the main menu of WordStar which gives a preview of its other menus. About the only thing you have to configure is your printer and even this is very simple because you're given a menu of printers from which to choose. You also get the opportunity to verify your choices.

One of the more intriguing menus available is one which changes the various defaults of WordStar features. Here you can change features like margin settings, justification toggles, page



WordStar's function keys make complex procedures easy for the novice user.



The latest version of WordStar retains program's power but is easier to use. Be sure you enter the Edit mode, ample directions are provided.

breaks and help levels at the touch of a key. All of this can be saved into the WS.COM file. You can even create various versions of WS.COM—since WordStar is not copy protected—if you have different types of documents that require different kinds of defaults.

First-time users of WordStar 3.3 probably won't appreciate this feature as much as those of us who struggled with earlier versions. The experience went something like this: Somewhere in the back of the WordStar 3.0 manual is a cryptic reference to the possibility that defaults could be changed—for a price, extracted not in legal tender but in wear and tear on the user's psyche. Assuming yours was a legal copy, you called your dealer only to discover he thought default settings had something to do with tennis. With luck, he gave you the number of a MicroPro service technician in San Rafael, Calif., who when finally reached immediately referred you back to your dealer.

Today, however, you can not only skip this experience, you can violate one of the founding principles of WordStar; you can keep your fingers on the home keys. WordStar was created with the touch-typist in mind. It contains a cursor diamond and command keys which, with the control key, enable you to move the cursor without your fingers leaving the home row. Control-E moves the cursor up, Control-X moves it down, Control-S moves it to the left, Control-

D moves it to the right. Earlier versions of WordStar did not allow use of the arrow keys or other function keys designed to "simplify" this operation. Seymour Rubinstein, chairman emeritus of MicroPro and the man responsible for WordStar's initial marketing, believes

The most obvious improvement is in the documentation. The user gets a well-edited, excellent manual.

function keys are worthless packaging devices invented by modern marketers. Using these keys is confusing to a touch-typist, Rubinstein says, and takes attention away from the document being typed. "No typist can naturally hit a function key without looking at the keyboard," says Rubinstein. "Anytime you look at the keyboard, your attention is diverted from the document." In spite of this, today's 3.3 allows you to use either the control combinations or function keys as you see fit.

Nevertheless, Rubinstein's reasoning is sound. There is room for skepticism, especially toward those who measure one word processor against another in terms of keystrokes, rather

than in the time it takes to hit the keys. On the other hand, it is helpful to have a function key for tasks like continuous scrolling, which usually requires Control-Q-Q-Z or a Control-Q-Q-W task that involves a departure from home keys, like editing a document through continuous scrolling, can be made easier with a function key.

WordStar not only allows use of the IBM function keys but also allows you to choose the functions they control. When you select a function key adjustment choice in the feature menu, you are shown the function keys in the order of their numbers. If you want to change F1, for instance, from the Control-B reformat command to Control-Q-Q-Z, the command that scrolls quickly through a document, you simply type QQ Z for the value—and the installation program then verifies that what you put in is what you want. The installation program has a final verification when you exit back to the operating system. You can either save your choices or return to any section of the program to choose. If you are just playing around and this is not your original installation—you can ignore any changes during this session.

About the only other item you wish to adjust is color, if you are using a color monitor and if you want to change color. Color is one of those "blat-

A NEW IMPROVED VERSION

One of the difficulties the earliest version of WordStar presented to the new user was struggling through the various menus that could be called to screen by hitting the control key and a letter key. For example, if you hit control-O, a menu of commands washed onto the top of your screen which controlled "onscreen" parameters—margins, tabs and line spacing. It was from that menu too, that you set the on/off function for word wrap, hyphen help, soft hyphen, justification and page breaks.

That was fine—as far as it went. But if you ever wondered exactly what each of those control functions did, the

old documentation made it hard for you to find out. Yes, you could get to the help function and follow along on-screen, but the explanations were necessarily short, and it was more than a pain to have to continually go from the help screen to the text page every time you needed to know what a command meant.

MicroPro's WordStar version 3.3 reduces those problems by providing the user—neophyte or old pro—with a one-page overview of each of the screens and the controls it provides, and by identifying the chapter where more information can be found (see examples below). That one improvement cuts the learning curve by hours.

CURSOR MOVEMENT			
^S	char left	Moves cursor one character to the left	p. 3-7
^D	char right	Moves cursor one character to the right	p. 3-7
^A	word left	Moves cursor one word to the left	p. 3-8
^F	word right	Moves cursor one word to the right	p. 3-7
^E	line up	Moves cursor up one line	p. 3-8
^X	line down	Moves cursor down one line	p. 3-9
SCROLLING			
^W	up line	Moves screen view up one line	p. 3-8
^Z	down line	Moves screen view down one line	p. 3-9
^R	up screen	Moves up one whole screen	p. 3-8
^C	down screen	Moves down one whole screen	p. 3-9
DELETE			
^G	char	Deletes character	p. 3-15
DELETE	chr lf	DELETE Key deletes one character to the left	p. 3-16
^T	word rt	Deletes one word to the right	p. 3-17
^Y	line	Deletes one full line	p. 3-18
MISCELLANEOUS			
^I	Tab	Moves cursor to next tab mark	p. 6-11
^B	Re-form	Rearranges text to form paragraphs within margins	p. 3-19
^V	INSERT ON/OFF	Toggle switch for insertion feature	p. 3-12
^L	Find/Replce again	Continues the search of a ^QA or ^QF command	p. 5-6
RETURN	End paragraph	Inserts a "hard" carriage return into text	p. 3-23
^N	Insert a RETURN	Inserts a "hard" carriage return into text	p. 3-24
^U	Stop a command	Interrupts many commands before executed	p. 1-14
OTHER MENUS			
^J	Help	Displays the Help Menu	
^K	Block	Displays the Block Menu	
^Q	Quick	Displays the Quick Menu	
^P	Print	Displays the Print Menu	
^O	Onscreen	Displays the Onscreen Menu	

Table courtesy of MicroPro International Corp.

BRAINSTORM WITH THOR

Whatever the task, Thor can organize it: a sales territory or a dinner for 200; a legal brief or an article; a seminar, a specification, or a budget; a shopping list or a production schedule; a marketing plan or an exercise program; a medication schedule or a political campaign; a construction project or a resume.

Capture your thoughts

You know how you think: one

thought triggers another and another. Some of your best ideas get lost in the ensuing storm.

This powerful new software package can harness these brainstorming thoughts. Thor, The Thought Organizer, automatically dates your every thought. And you can pigeon-hole them into categories that you define. You can recapture each idea anytime by category, date, or key word.

Free your mind

You just come up with the idea and Thor remembers them for you. That may have been an oversight just an indication of the difficulty of the task. Thor accommodates your unique thinking patterns.

Master your PC

Designed for the IBM PC and compatible, Thor takes full advantage of the capabilities of the PC. The color palette, and range from white on blue and black on red to psychedelic greens and yellows. Like the rest of WordStar 3.3, Thor is easy to install—once you've installed it.

Put Thor to work

Just \$20 will get you a Thor package. And another \$275 will get you WordStar 3.3—total \$295—will unleash all the power of Thor. To order, or to receive more information, call toll-free (800) 372-2345, in New Jersey (201) 676-7963.

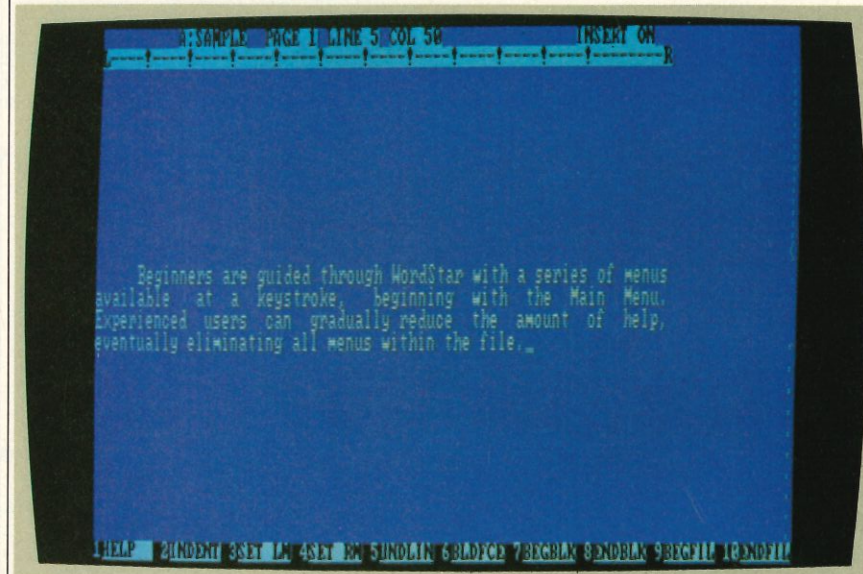
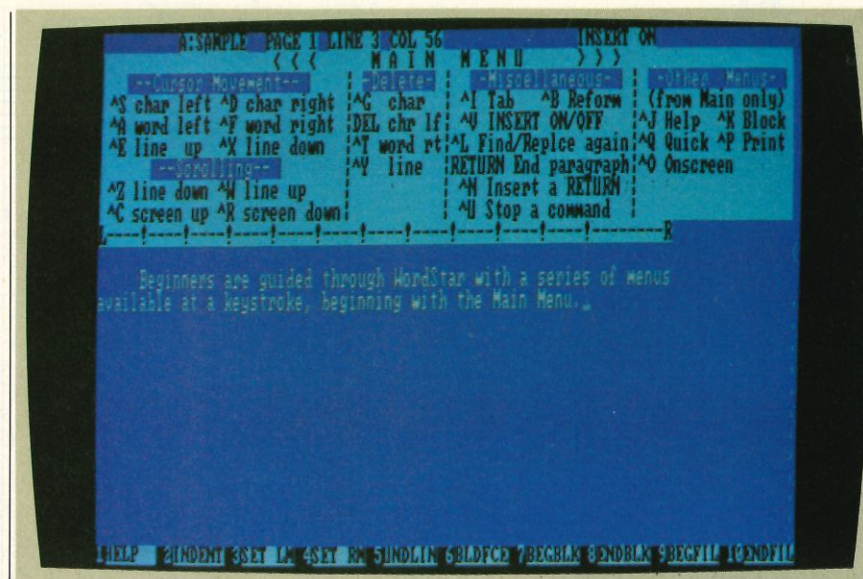
THOR
The Thought Organizer

Fastware, Inc.
200 Freeway Drive
East Orange, NJ 07027

Thor features that is not necessary for word processing. MicroPro does its best to hide the fact that color is available for WordStar—even in its new improved documentation. In order to install color, it was necessary to call MicroPro to find out how color monitors can adjust both menu and text colors. That may have been an oversight just an indication of the difficulty of the task. Thor accommodates your unique thinking patterns. Whether it was a second thought or a concession or both, color is done well and powerfully. The palette of colors available for text and menus is extensive, and range from white on blue and black on red to psychedelic greens and yellows. Like the rest of WordStar 3.3, Thor is easy to install—once you've installed it.

Color is installed after you leave the installation menu, having saved all of your choices. This is done from within the BASICA program on the PC-DOS diskette. From BASICA you load a program WSCOLOR.BAS and once again you are given simple choices. You select colors by moving the arrow keys through the palette and striking a "T" for text color choice and "M" for menu color choice. A simple "X" will exit the program and the color choices made will be saved.

Having installed WS.COM you are now ready to create a document. When you boot WordStar you begin with the "No File" menu which gives you a list of document actions. Since no document has been created, you choose "D" to open a new document file. Now you are at the crossroads of WordStar, the main menu, where all the functions come together. Every possible function is listed in a series of menus. There is a quick menu, which speeds up some cursor movements and performs operations like find and replace and reformatting. The block menu, which does block moves, copies and deletions, is attained with a Control-K. An on-screen menu which sets margins, line spacing and other displays on the screen, is reached with a Control-O. Finally, the print and help menus, which outline commands for print formats such as left-facing and subscripts and help levels, are reached by a Control-P. There are three basic things you

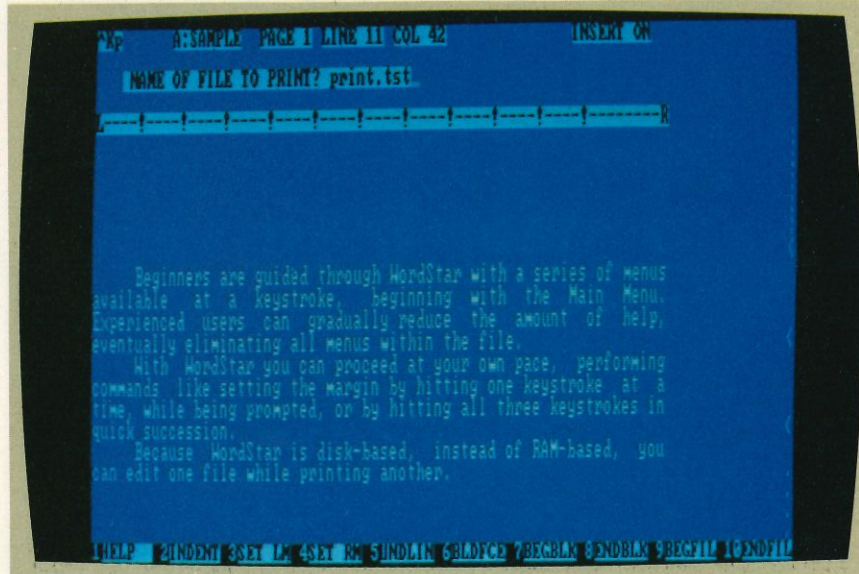


In WordStar 3.3, novices can take advantage of extensive help information beginning with the Main Menu to guide them through the program.

have to know about creating a document with WordStar. First, unlike some other word processing programs, WordStar is modeless. You don't have to be in edit mode to edit your document or in format mode to print it. Everything can be done at any point, even within a document. Second, with WordStar, what you see is what you get; everything is formatted on screen as you proceed. Third, WordStar is powerful enough to print one document while editing a second. These capabilities are possible because WordStar is disk-based rather than RAM-based. In order to see what you will get in print your screen has to look the way

you want your document to look. The default setting assumes the piece of paper is a standard 8 1/2" by 11" with standard measures like a 65-column line and tab stops built in every five spaces beginning at Column 6. You do not have to go to format mode in order to change these settings. For example, let us change the right margin from the default 65 columns to 55 columns. Beginners have the option of first hitting a Control-O and pausing, which brings up the on-screen menu. From the menu you choose "R" for a right margin setting. That brings the message: "RIGHT MARGIN SETTING (ESCAPE FOR CURSOR COLUMN)?"





With WordStar 3.3, more advanced users have the option to use more minimal help information, or even eliminate all help menus within a file.

From here, you type 55, which resets the margin to the new value. However, once you are familiar with the process, you have the option to hit in quick succession, Control-O-R-55, which accomplishes the same task much faster because you don't have to pause for the menus and prompts. Best of all, the experienced user can turn off all of the help menus.

Let us assume that the page defaults are now correct and we can begin typing. Once again, WordStar is designed for the touch-typist. There is no need to enter a carriage return, for example. Words are neatly wrapped and with the justification toggle turned on, the right

margin aligns as if the document were being typeset. Some people prefer to work with the justification off since WordStar will create a lot of white space between words if it is not allowed to break up long words.

Even the best touch-typist is capable of making errors. There may be a character left out of a word or a word left out of a sentence. Without leaving the home row, Control-V can be invoked which turns on the insert toggle and the word typed in. Those who are continually making typographical errors tend to leave the insert on. In order to rejustify or unjustify the paragraph, you can hit a Control-B, again without leaving

the home row and the entire paragraph will be realigned. In the course of realignment, WordStar will even suggest places where a hyphen can be inserted. If you accept the suggestion, you simply insert what is known as a soft hyphen. The hyphen will be eliminated if a later reformatting eliminates the need for it.

The same is true if you need to delete a character, word or line. There is a special mode to enter because the controls have their own commands on the home row. A Control-G deletes a character, Control-T a word and Control-Y a line. Control-Y in conjunction with Control-K from the block menu eliminates an entire block.

The block menu is one of the powerful features of WordStar. With this tool you can first select a block, again without your fingers leaving the home row, with a Control-K for the beginning and Control-K for the end. The marked text is then highlighted and ready to be moved, deleted, copied or saved for later use. The block can be moved either within a file or to another file with the Control-M command. With the latter operation, however, you must be careful—discovered the hard way—not to copy a block to an existing file. The command writes over anything that is now on the existing file. This is one of the few ways you can lose a file with WordStar. With the complementary R command, you can maintain "block" files with blocks of information that are frequently used and move them into the file on which you are working.

The block commands let you move one to nine places within a long document so that you can go back to quickly with a Control K(n) command, "n" being the number of the place marked. Another way to find a place to use the Find and Replace operation found in the Quick Menu area. Control-Q-F will search for a word within a document. Control-Q-A will search for the word and allow you the option to replace it everywhere in the text, either globally or per each occurrence. WordStar allows you as much as 10Mbyte hard disk space if you desire—make one document of *War and Peace*. However, you

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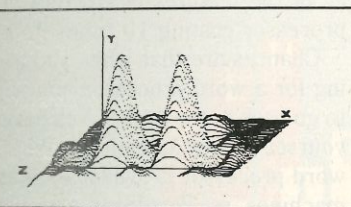
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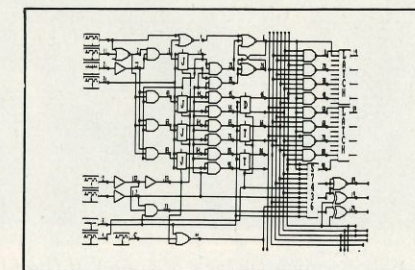
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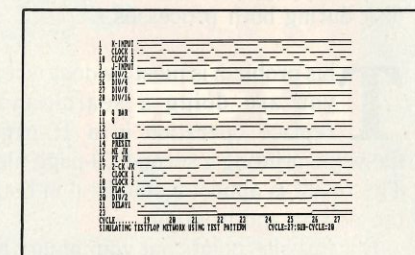
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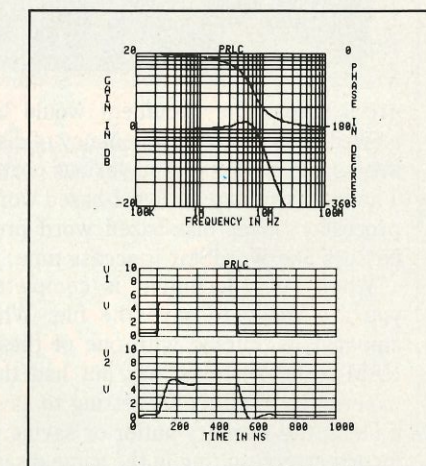
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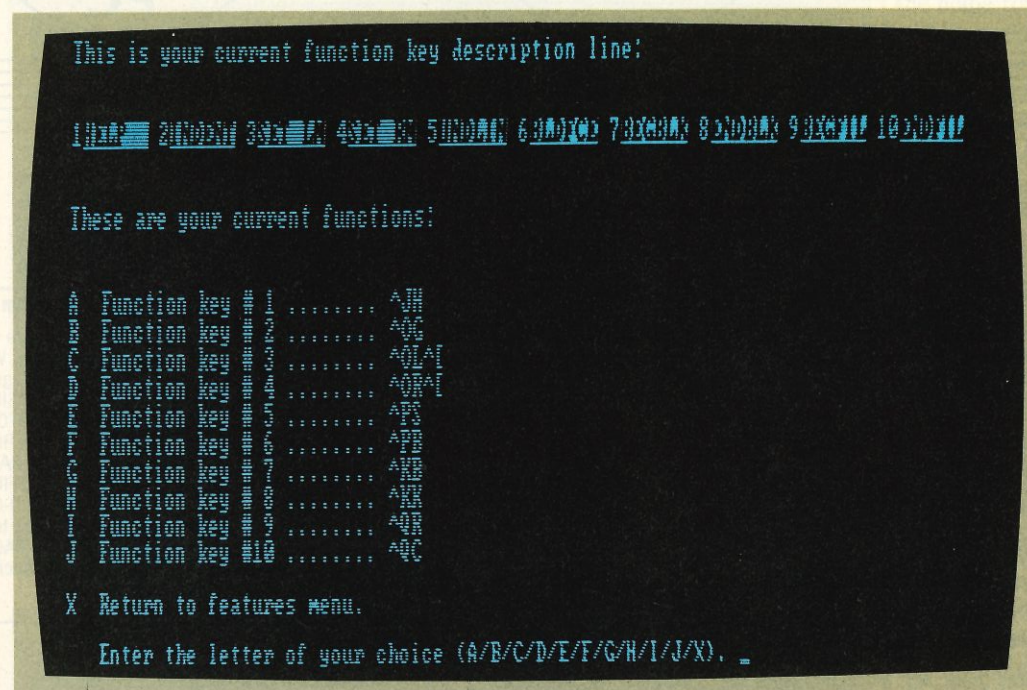
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Users can perform functions like setting the margin by being prompted one key stroke at a time, moving more quickly by hitting three strokes in succession.

gress across the document would be slowed because of the frequency of disk access and having to find various parts. The big advantage of RAM-based word processors over disk-based word processors like WordStar is access time.

When your document is complete, you are ready to save the file. Who amongst us, cursed with one of these RAM-based systems, has not had the experience of either forgetting to save a file in the memory buffer or saving it incorrectly, resulting in the same disaster. The thought of a whole day's work vanishing is enough to turn the most ardent hacker into a cyberphobic. But WordStar automatically saves your work when you exit a file, unless you ask it not to. (In order to surrender your file, you must first hit Control-K-Q and then WordStar asks if you indeed want to abandon the file in question.)

The most powerful advantage of WordStar—once again due to its disk-based nature—is its ability to print one file while editing another. In WordStar, if you are editing a file, all you need do to print another file is to hit Control-K-P. With this command you are given the same set of questions regarding the built-in defaults on where printing is to begin and end, pauses stop between pages and so on—the same as you would get if you hit Control-P from the main menu. You can proceed to edit the document you are working on while the printer prints out the other one. The

only handicap is lack of speed. If the file you are printing and the file you are editing are both very large, WordStar tends to grind along at a snail's pace because it must frequently access the disk during both processes.

This problem is most evident when you are doing a search-and-replace operation in a 10-page file while printing a second 10-page file. The result is almost a standstill in both the editing and printing.

But this also points out your ability to recover from a difficult situation within WordStar. A built-in function accessed by Control-U allows any command to be interrupted before the mistake can do any damage.

Users of the IBM Personal Computer and other 16-bit systems will have an advantage over those of who were introduced to WordStar on Z80-based CP/M systems. The primitive Z80 was never meant to be a multi-tasking chip and WordStar's various demands often drained its 8-bit architecture, slowing down the response.

This entire document has been written using only about 50 percent of WordStar's full power. We have not touched on the powerful MailMerge option that produces form letters or the SpellStar option that checks spelling (which has now been joined by CorrectStar, which actually corrects spelling errors). With version 3.3, Micro-

Pro's WordStar has succeeded in meeting its inventor's charter: To provide all of the features of a dedicated word processor costing 10 times its price.

Chances are that when you are looking for a word processor you will go back to the basics. You have to ask yourself a few questions. What word processor is available on as many machines as WordStar and uses the same command keys for each of them? What other word processor allows you to run operating system commands from within a file? What other word processor has launched its own industry?

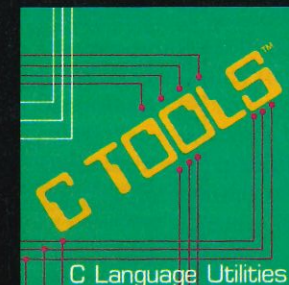
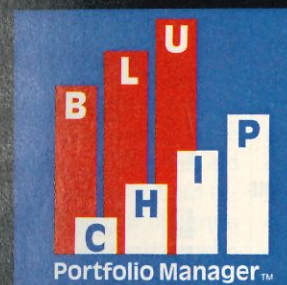
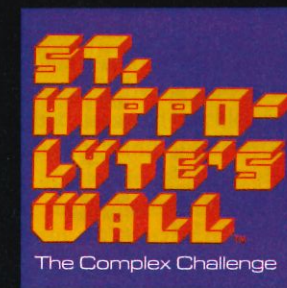
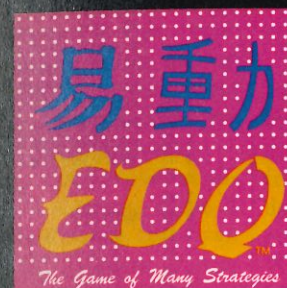
If you walk into any computer store or any bookstore, you will discover books, seminars or lectures on how to use WordStar. There are at least a dozen volumes written on this grandfather of personal computer word processing systems. Critics have charged that this is due to the historic shortcomings of MicroPro's documentation and the difficulty of learning WordStar itself.

Rubinstein scoffs at any notion that WordStar is difficult to learn. In his view, WordStar is easier to learn than the word processing tool of early generations—the typewriter. "Anyone who has ever had to learn how to use a typewriter can understand how easy WordStar is by comparison."

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Ever since the widespread availability of personal computers made it possible for individuals to do their own data processing, the concepts of true relational data base management power and user-friendliness have seemed to be mutually exclusive. The reigning standard in the high-end data base software market is widely thought of as one of the most inscrutable, skull-cracking and downright user-hostile programs ever invented. When the old borne Computer Company began offering free copies of this \$795 program as a buying incentive, customers who

responded undoubtedly felt as if they'd been given a pet gorilla—yes, it had a lot of power, but figuring out how to use it was another matter.

The emphasis on ease of use in new software keeps growing and it was inevitable that it would trickle down to more complex (and inherently less friendly) applications like relational data base management. Proof of this comes from Microrim of Bellevue, Wash., in a product called R:base 4000. Microrim hopes it will fill a hole in the high-end data base market by offering full relational power and speed while respecting the varying help and friendliness needs of its users. In fact, R:base's ability to provide varying levels of help makes it an excellent way for data base management novices to ease into the application with a program they'll never outgrow. R:base's greater sorting speed, higher capacities and

lower price compared with its competition are simply the icing on the cake.

If you've never done any relational data base management, you won't be comforted by R:base's huge manual, but once you're up and running it's remarkably smooth. There's a separate tutorial diskette with a 70-page manual that gets you into hands-on learning within five minutes of sitting down with the program. The tutorial is divided into six sessions that orient you to the program in a logical way. The diskette is essentially a scaled-down version of the program itself (there are tight limits on your ability to create and store files) along with a couple of sample data bases you can search through, add to and otherwise manipulate. The six sessions are logically ordered and offer an excellent overview of the program's capabilities.

R>HELP INTERSECT

INTERSECT Command

The INTERSECT command combines rows from two relations creating a third relation where the values of common attributes match.

```
INTERSECT relname1 WITH relname2 FORMING relname3 +
(USING attname1 [attname2 ... attnamen])
```

You may name attributes for INTERSECT (the USING clause) or use all attributes from both relations. In either case R:base 4000 will identify common attributes. The USING clause identifies those attributes that make up the new relation as well as identifying the attributes that must match in the old relations to form a row in the new relation.

INTERSECT is used to satisfy queries which require attributes from more than one relation.

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base's on-line help features explanations of all 39 commands and in the program.

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TEST DRIVES

There's something very linear and rigid about most software tutorials that are absent from this program. A lot of tutorials, particularly those for complex programs, start you off with a listing of commands in the program and descriptions of what they do. An alternate (and no more helpful) method puts you in the Square One of the path you'd normally take in using the program and then walks you through the program's use. The command-listing method bombards you right away with a lot of information you don't need. The path-of-use method is confusing with complex programs because it must necessarily show you a lot of specific procedures before you have a fundamental understanding of how the program works.

Looked at from either of these traditional approaches, the R:base tutorial seems jumbled. It's designed for people who don't know a lot about relational data base management to begin with and it makes a lot of sense for them. Relational data base management is an application you really have to use to grasp, so the tutorial quickly starts you using the program, but not before it shows you R:base's main help features, the Help command and the Prompt mode. While the tutorial sessions don't ask you to use these modes much, it's comforting to know they're there.

Instead of presenting the Square One of building a data base, you load a pre-defined data base and use Select

(the main search command) to get a feel for retrieving information. The manual has described the basic structure of a relational data base already, so trying Select reinforces that concept and shows you one of the program's major features.

R:base allows 40 relations per data base...it's like having 40 separate files of information.

The most difficult thing about learning R:base is getting used to its terminology. Almost every other data-handling program refers to *files*, which are collections of *records* consisting of *fields* of information. Microrim refers to these elements as *relations*, *rows* and *attributes*. The company doubtless feels that its terms are more accurate, but being right isn't everything, particularly when it makes things unnecessarily complicated, especially if you have past data base management experience.

In the first tutorial session, you're shown how to search for and select information from a data base. Because of

the way the sample data base is organized, it reinforces the structural concepts of attributes making up rows, rows making up relations and relations making up a data base. You load in a data base called Places which contains a relation called Cities. To see the data in Cities, you type SELECT ALL FROM CITIES. This command structure is followed throughout the program: You type the program command, the specific attributes you want it applied to and which relation you want the information selected from. You can also apply conditions to the end of such a command with the Where command. SELECT ALL FROM CITIES could be narrowed by using Where to stipulate that the ZIP code (an attribute name) should be greater than 80000. R:base lets you search on up to 10 different attributes at a time.

You also discover the fundamental concept of not being able to see all the attributes on the screen at once. Since the attributes are columns of information on the screen, a relation with more than four or so columns will have off-screen information. You learn how to view off-screen attributes by exploring with Select.

The tutorial continues in this vein, showing you what it's like to use the program's various features as much as it shows you how some of the R:base commands work. You learn the general procedures for creating relations, spec-

E(edit),R(relation list),A(attribute list),G(go),Q(quit):_

PROMPTS

Prompts exist for the following R:base commands:

ASSIGN	DELETE	INTERSECT	PASSWORDS	RENAME	SUBTRACT
ATTRIBUTES	EDIT	JOIN	PRINT	REPORTS	TALLY
BUILD	ENTER	LISTREL	PROJECT	RULES	UNION
CHANGE	EXIT	LOAD	PROMPT	SELECT	UNLOAD
COMPUTE	FORMS	OPEN	RELOAD	SET	
DEFINE	INPUT	OUTPUT	REMOVE	SHOW	

To be prompted for one of these commands type 'G', then the command name

Command prompts will lead you to a detailed explanation of any base command.

ifying new attributes, sorting information and creating reports. While there are specific keystroke sequences to follow when you're first introduced to a concept, the tutorial program has enough power to let you explore beyond these sequences. While you're specifically prompted to select certain attributes from CITIES, you can fiddle on your own to call up other attributes or put limits on the search—the basic powers of the full program are provided in the tutorial. The entire tutorial can be completed in less than two hours—less than an hour if you know anything about data bases.

With a traditional data base management program, a session with the tutorial only helps you figure out where to look for the information you'll really need to build a data base. The beauty of this program is the amount of on-line assistance that has been designed into it. There's a Help file that lists all the commands you have available and lets you display an explanation of each one. There are other, more integral features of the program that make it simpler.

To begin with, the program has only 39 major commands. There are four relational commands which let you combine, compare, subtract or intersect information from different relations. The rest of the commands handle data entry, searching, reporting, file

management and computations. Many of these commands can be enhanced with Boolean language to greatly increase their power and flexibility. Commands can be added to each other as well. All the commands can be displayed on the screen by simply typing

*The commands are
all simple
English and once
you get used to
the syntax, they're
easy to build.*

Help at the main prompt. This gets you a listing of the commands in alphabetical order. Once you have the main help screen up, you're in Help mode. Typing the name of a particular command at the prompt will get you a screenful of information about what that command does and how you would use it. To get out of Help mode and back to the main prompt (and, generally, to get out of any command sequence or mode in this program), you simply hit the Escape key. Being able to use Escape this way makes you feel totally in control at all times.

Another aspect of R:base's design that is helpful is its Prompt mode. Any

of the program's main command be entered directly at the prompt, but this requires that you know the proper syntax for the command. New users will want more assistance than this (so they won't have to consult the manual in one hand when using the program) and R:base's Prompt mode provides it. If you type Prompt at the bottom of the screen as you answer appropriate prompts. When you type Prompt Select you get a series of prompts that fill in details about each segment of the Select command. Above these is a brief explanation of what the command does.

Suppose you wanted to get data from the CITIES relation to retrieve information about cities with ZIP codes lower than 60000, ordered alphabetically by city name. Usually won't ever remember them. In the Prompt mode, the prompts you don't, you can type Prompt Select and ask for the name of the relation (you would answer CITIES); which you would answer CITYES); attribute names (you would say All, which you want all information about the area and the cursor is located on the first prompt which asks you to enter one of the eleven control keywords. Once you type the keyword and hit any other conditions (in this case, turn, the cursor moves to the next prompt, which asks you to specify the control option you want (bell on prompts, the actual direct command is You can continue selecting more keywords if you're changing more than one control or you can hit Escape back to the main program prompt. By seeing the actual command displayed whenever

The Prompt mode is particularly helpful with complex commands. Use the Prompt mode, you gradu-

ally learn how to structure the commands themselves.

Most programs that offer this level of help force you to step over it once you master the commands. As you use the program, you'll have less and less use for the prompts. R:base gives you a

*The beauty of
this program is
the amount of
on-line
assistance
designed into it.*

choice. You can use the prompts or not use them. You don't even have to jump in and out of the Prompt mode. Since you request a prompt sequence for a specific command, the mode is invoked only when you specifically ask for it. You're automatically returned to the main program prompt as soon as you're done with that specific prompting sequence.

This can be annoying if you don't know the command and can't quite remember the name of an attribute you want to sort. If you answer an attribute prompt with an improperly spelled name the program doesn't tell you until it tries to perform the command. Un-

able to perform the command, it returns you to the main program prompt (rather than letting you try respelling that particular prompt answer in Prompt mode). This means you might have to enter Prompt mode several times if you keep making a mistake. Nevertheless, this is a lot better than the mode's being difficult to get rid of when you don't want it. Microrim rightly assumes that everyone will eventually use the prompts infrequently and that it's better to make them the exception in use rather than the rule.

It's a decided comfort to know that the prompts and help screens are a couple of keystrokes away whenever you want them. You will certainly want them for a while, because like any powerful program, R:base has lots of options that take time to learn. When mistakes are made, there are error messages that give you a lot of information about what you did wrong. If you use a Select command that contains a non-existent attribute, you get a message that tells you the attribute doesn't exist. In a lot of other programs, you'd simply get an unhelpful message like "Improper Command."

The variety of assistance available within R:base is indicative of the ease and flexibility in other areas of the program. To define attributes for a relation you simply type Attributes at the prompt and then enter each attribute

E(edit),R(relation list),A(attribute list),G(o),Q(uit): A

SELECT

SELECT is used for retrieving data from a relation. You need to specify the relation (table) with the data and what attributes (columns) you want to see. If you want to see all columns you can use ALL for the attributes. If you want the data sorted, you may optionally specify attributes for sorting. If you want to restrict the rows selected, you can optionally specify the selection conditions with a "WHERE" clause. Totals and column width may be specified for each attribute.

PROMPTS

Name of the relation : PROJECTS
List of attribute names :
Sorted by attribute(s) :
Where :

JOB EST-COST \$TO-DATE DAY-EST FINISH

E(edit),R(relation list),A(attribute list),G(o),Q(uit):

SELECT

SELECT is used for retrieving data from a relation. You need to specify the relation (table) with the data and what attributes (columns) you want to see. If you want to see all columns you can use ALL for the attributes. If you want the data sorted, you may optionally specify attributes for sorting. If you want to restrict the rows selected, you can optionally specify the selection conditions with a "WHERE" clause. Totals and column width for each attribute may be specified.

PROMPTS

Name of the relation : ACTIVITY
List of attribute names : ALL
Sorted by attribute(s) : BRANCH
Where :

REP/NAME	YR/QUOTA	YTD/ORD	BRANCH
harrison	\$25,000.00	\$25,000.00	LA
peabody	\$10,000.00	\$0.00	LA
watson	\$30,000.00	\$35,000.00	San Fran
shaw	\$25,000.00	\$20,000.00	Seattle

Typing Prompt Select brings you to the help screen for the select function.

The program prompts you to fill in the data needed to perform the select function.

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INVENTORY ACTIVITY REPORT JUNE 16, 1988							
PART NUMBER	LAST ACT	CUM RCVD	CUM SOLD	CUM ADJ	ON HAND	COST	INV \$\$\$
100A-672	06/14/88	16000	14650	-50	1100	0.08	88.00

ACCOUNTS RECEIVABLE AGING REPORT JUNE 16, 1988							
CUST-INVC#	CUSTOMER NAME	INVC DATE	CURRENT	THIRTY	SIXTY	NINETY+	

ACCOUNTS PAYABLE AGING REPORT JUNE 16, 1988							
VEND-INVC#	VENDOR NAME	DISC DATE	CURRENT	THIRTY	SIXTY	NINETY+	

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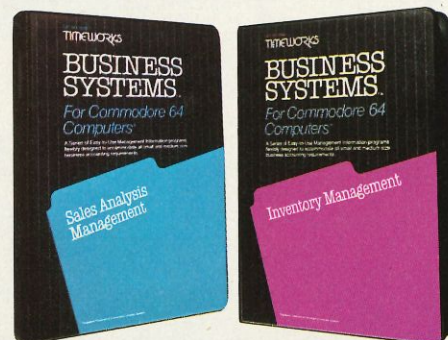
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TEST DRIVES

time and data type on individual lines enter that. On each line you put the attribute name (which contains up to eight characters), the data type (either integer, text, real number, date, time, dollar) and the maximum number of characters if the data type is text. Text attributes can be up to 1500 characters length. Using another command called Rules, you can specify conditions to validate the data entered in an attribute. If your maximum employee wage is \$13 per hour you might want to insert a rule in the attribute for an hourly wage that doesn't allow higher amounts than that. When a data entry error was made and the limit exceeded, a custom error message you created would appear to explain the error. When you're finished defining attributes you type on the next line to exit the sequence and save the definitions. Attribute names can later be changed to correspond with similar attributes in other relations.

There are four different ways to enter data into a relation. You can use the LOAD command, which simply allows you to enter rows of data without prompting. LOAD WITH PROMPTS gives you a list of the attributes down the screen so you can be reminded which data to enter in the order the attributes were named. A third option is to store data in an external file created with a word processor, spreadsheet or other data base program and load it into a relation using the INPUT command. R:base has conversion utilities to read DIF, SYLK, Lotus 1-2-3 and dBASE II files easily. The fourth option, called Enter, uses a data entry form you've designed.

Designing data entry forms is fairly straightforward. You can display all the attribute names you've defined so far and then call up a blank screen. The data entry form is created by moving the cursor to wherever you want and typing in the name of the attribute you want there. You can add a title to the form and put in custom prompts if you like. You can also design custom menus to bring up different data entry screens or predefined reports.

Designing data entry forms is fairly

You "draw" the format of reports on the screen using cursor control keys, then specify column length.

R:base's maximum limit on the number of relations per data base is 40. This is like having 40 separate files of information and it seems unlikely that you'll ever have that many. Other programs only allow a handful and once you're

familiar with R:base's relational capabilities and what they can do for your information needs, you'll see why this capacity has been pushed up.

Generally, our need for information doesn't occur all at once but develops over time. We may start out with a relation called Customers that contains customer names, addresses, numbers and the name of the salesman assigned to the account. Another relation, called Sales, might contain the customer names, salesman's name, date and amount of last order and year-to-date orders. A third, called Commissions, could contain salesmen's names, year-to-date sales, commission rate and year-to-date commissions. But suppose you wanted to correlate salesmen's commission rates with individual customer account activity? You'd have to create a single relation containing all that information using selected information from two different relations, Commissions and Sales. Using an R:base command like Intersect, you could intersect Commissions with Sales and form a new relation called Incentives, using the relations Name, Customer Name, YTD Orders and Commission Rate. This would give you the information you needed without forcing you to wade through data that was irrelevant in that particular analytical situation.

With commands like Intersect, Union, Project and Subtract, R:base

ERROR- Not a valid Riverside physician - Push (ESC) when corrected

RIVERSIDE HOSPITAL

PATIENT: Bennett, Mary E. ADDRESS: 202 West Farley St.
Seattle, Wa 98166

BIRTHDATE: 12/29/49 PHONE: 543-6564 OCCUPATION: Receptionist

PATIENT SOC. SEC. # BUSINESS PHONE BILLING ADDRESS: Same as above
232-54-3455 345-8887

REFERRING PHYSICIAN CLINIC PHYSICIAN DATE OF INJURY
Dr. Samuelson Dr. Smitzx

R:base's error detection highlights and explains different kinds of data entry mistakes.

makes such relations easy to do. Intersect forms a new relation from existing relations using only rows (or records) with matching attribute values. The Join command combines two relations based on attributes specified for each and forming a third relation from the matchup. The Project command creates a new relation from one existing relation based on specific attributes and sort orders specified. A 10-word command will create a new relation from a couple of existing ones to give you the information you need. The commands are all simple English and once you get used to the syntax they're easy to build. Of course you always have the Prompt mode to help.

Relations are easy to create and easy to delete. The philosophy is that you might want to create a relation for ad hoc analytical purposes and then not want it cluttering up your storage disk forever. The Remove command, followed by the name of a relation, is all it takes to purge unwanted relations. In keeping with its concern for the user, R:base asks for a second verification of this and other destructive commands.

When it comes to generating reports, R:base works a lot like it does when you define attributes for a relation. You "draw" the format of the report on the screen using cursor control keys and you specify the length of each column in the detail area of the report just as you would mark attribute lengths in a rela-

tion. Microrim sells an optional report generating program and you'll probably want this if you have sophisticated reporting needs.

Upon initial evaluation, it was impossible to test Microrim's claim that R:base has a capacity of 100 billion

The most difficult thing about learning R:base is getting used to its complicated terminology.

records—2.5 billion rows per relation with a maximum of 40 relations per data base. It probably doesn't matter anyway. The maximum row (record) size is just over 1500 characters. Even with a 20Mbyte hard disk you wouldn't get many more than 10- to 12-thousand records in the volume. Unlike one or two competitive products, R:base cannot maintain a data base across more than one volume. If you're using a floppy disk-based storage system, you'll be limited in size to the capacity of one floppy disk.

R:base is also said to be speedy and our experience confirmed the claim. Using two sample relations containing

some 50 rows and five relations we were able to intersect the two in new relation containing 50 rows seven relations in 20 seconds. Searches took no time at all. Microrim advertising claims R:base 4000 can retrieve and sort 1000 records in less than a minute. This seems well within its powers.

Whether or not it bests its competition with raw power, R:base is much easier to use than most other programs in this class and is well worth investigating, particularly if you've never used a relational data base manager before. With its kind of friendliness and flexibility, R:base can make a relational data base believer out of anyone.

One feature we weren't able to test was R:base 4000's ability to exchange data with other members of the family. R:base 6000 is a data base manager for use on multiuser systems, network servers and larger computers. R:base 2000 is a trimmed down version that can run on 128k machines, such as the PCjr. There is also a separate program to generate reports and a natural language front end called CLOUTIER that eases searches by allowing us to use English language queries such as, "Show me all the turkeys," where turkeys are defined as salespeople who didn't meet their quotas.

—Charles R.

Making More Sense Of Your Dollars

The key to personal and business financial success could be as easy as turning on your computer and watching this program keep your finances straight

DOLLARS & SENSE Monogram, a division of Tronix, 8295 La Cienega Boulevard, Inglewood, CA 90301, (213) 5-0529; runs on IBM Personal Computer and Apple II series; \$165 (IBM), \$100 (Apple).

When you boot up the demonstration disk that is provided with Dollars & Sense, you're automatically presented with some very persuasive reasons for continuing with the program. The first screen reads, "Did you ever wish you were more organized every April 15 when you try to figure out what you owe Uncle Sam; you understood better where all the money you earn is going; you could set up a budget and use it to keep you out of trouble or let you save for that vacation you'd like to take; you'd a better way to find your way through all those financial records you must keep for your business?" If all your answers to those questions are "no,"

you really don't need this program, but if you can say "yes" to any one or all of them, you could really benefit from Dollars & Sense.

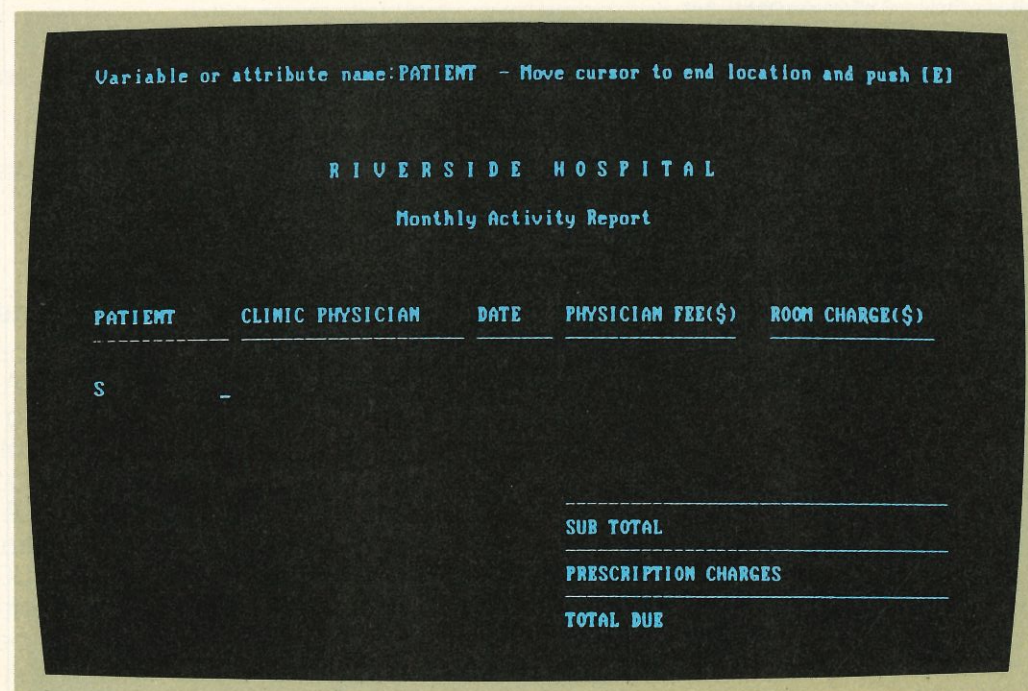
The demonstration disk, like most demonstration disks, is set up to show you the features of the program. In Dollars & Sense, the imaginary couple Fred and Mary Smith expose their whole financial history to us so we can see just how they solve their financial problems with the program. It is obvious right from the start that they are having some serious budget problems.

Before we begin the demonstration, however, Dollars & Sense tells us there are two key terms we have to learn first: Account is a term used to categorize and organize your finances. Accounts are used to identify the things you own (assets), your debts (liabilities), your sources of income (income), and the things on which you spend your

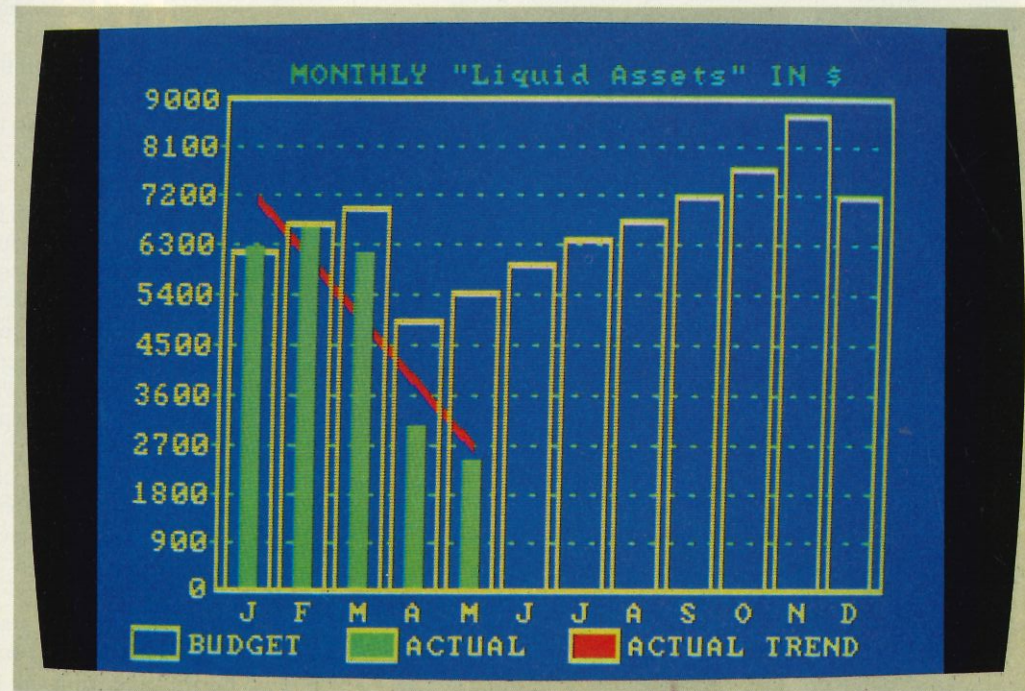
money (expenses). The second term, Transactions, is used to refer to any outlay, income, or other movement of money. Transactions include the list of checks and deposits in your checkbook and the items you accumulate on your credit card statements.

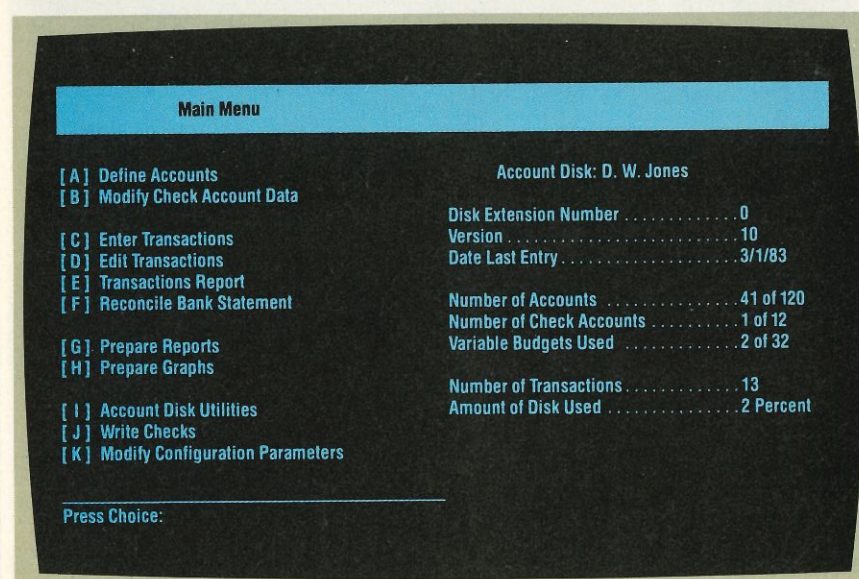
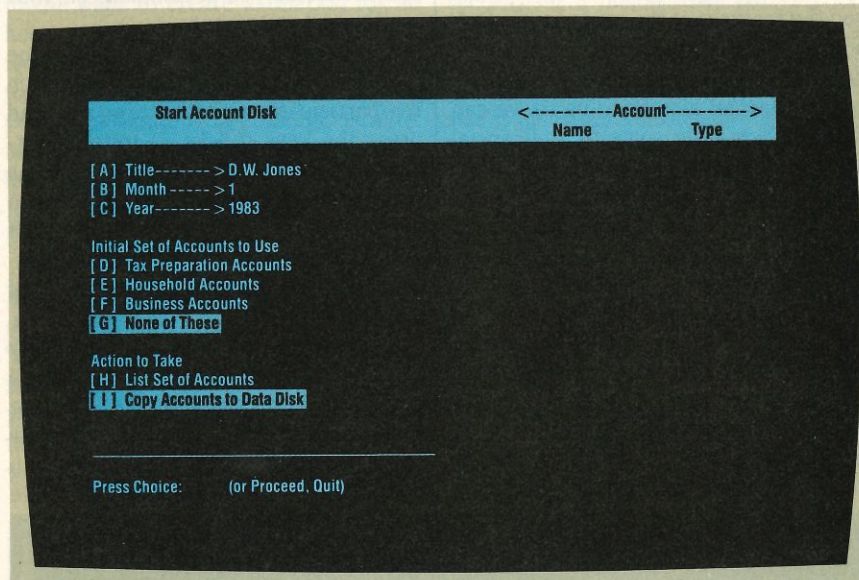
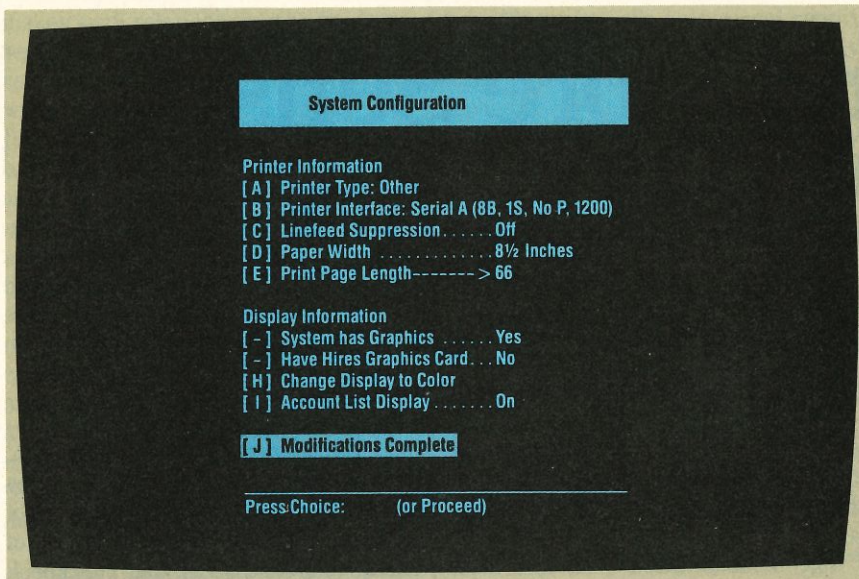
We can run the demonstration in one of three ways: interactively, in which we participate with the program and press the keys it asks us to; automatically, in which the program takes us through its features; and graphically, in which Dollars & Sense struts its stuff and shows us a sample of all the different kinds of graphs it is capable of producing.

Probably the best way to start any program, if you are given a choice, is to just let it do its thing, so we'll choose the second option and watch the show (we'll go into all the features in detail in this article). When that part of the



The report creation function incorporates data from the data base into a variety of formats.





demonstration is complete, we should watch the graphing show too.

Now that you've had a chance to take a quick look at the features of Dollars & Sense, let's get right down to business and boot the real thing and try to set up our own system. The package comes with only one program disk so the first thing we have to do is configure the system. The program asks you for the type of printer you have and gives you a selection of nine different makes of models including Okidata, Genie, Epson, NEC, and Texas Instruments. I have an Okidata Microline 84 printer, so I selected G) Okidata ML Series.

The next screen tells me that the system has been configured and the program. The printer information includes an Okidata ML Series printer, a parallel interface, no linefeed suppression, 8 1/2" paper width, 66-line paper length. The display information includes graphics, no hires resolution graphics card, and a black-and-white monitor. (I was using a Panasonic Senior Partner computer; if you have a color monitor hooked up to your personal computer it is quick and easy to change this last specification; all of your charts and graphs will be produced in color.)

On to the first Account Disk. You are asked to name the disk you will use for your data on with a title which can be up to 21 characters long. I suppose if you have more than one budget or you are keeping your budget on a month-to-month yearly schedule you would want to use strict identification guidelines, but for our purposes here, names are just names. The package's producer suggests you use your personal or company name. This title will be used on all reports and displays produced by Dollars & Sense. Next you enter the month (January for personal accounts; businesses should use the first month on their fiscal calendar), and then the current year. This information will also be used for reports and displays.

When setting up the kinds of accounts you want to use for your finances you can either use a standard set of accounts provided by the program

After you configure the system and set up accounts, you can start using the Main Menu.

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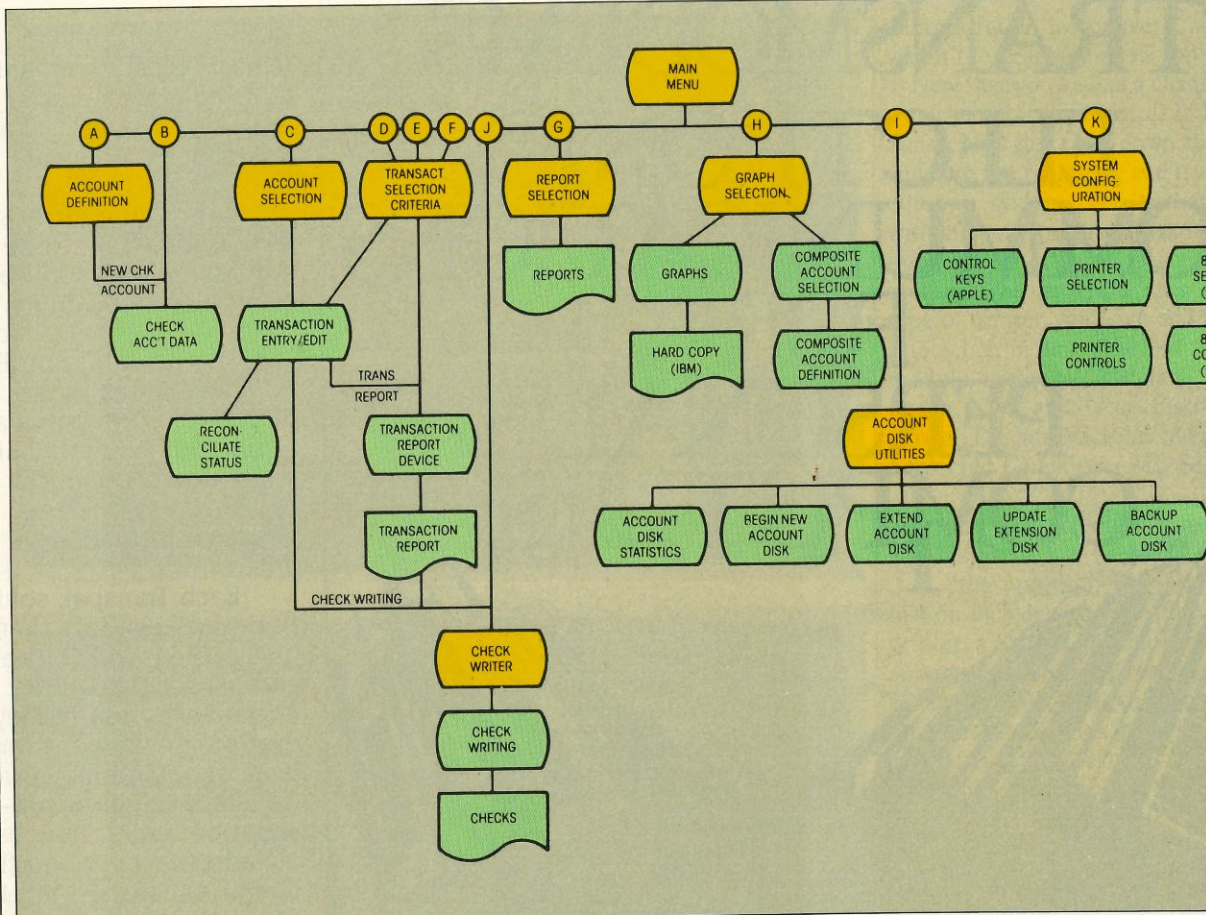
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This flow chart illustrates the many capabilities of Dollars & Sense as well as how the program is structured. Notice each function branches off of the Main Menu. As you go through the program you will learn that after each function completed you will return to the Main Menu.

enter your own set. The company suggests you review the sample accounts it provides in the manual (one sample for each set—tax preparation accounts, household accounts, and business accounts). You can look them up in the manual or you can press the appropriate letter, list the set of accounts, and then press P to see the sample accounts on the right-hand side of the screen.

If you choose this route, you will be instructed to put a blank disk in drive B (Blank and B would appear in color on a color monitor) then P and the program initializes the disk track by track counting them off as it proceeds from 1 through 40 then stores the selected account information on the data disk.

If you do decide not to use the preset accounts you must Define Accounts, A) on the Main Menu. The rest of this all-important menu, which we will see frequently throughout the use of this program, includes, B) Modify Check Account Data, C) Enter Transactions, D) Edit Transactions, E) Transactions

Report, F) Reconcile Bank Statement, G) Prepare Reports, H) Prepare Graphs, I) Account Disk Utilities, J) Write Checks, and K) Modify Configuration Parameters. We will discuss all of these in the course of this demonstration.

On the right side of the Main Menu screen is the status of the account disk with my name at the top, the number of accounts, the number of check accounts, the variable budgets used, the date of last entry, and the amount of disk space used. All of these factors will change as we continue to do more.

Two accounts have already been defined by Dollars & Sense when we get to the next screen—Check Charges (Expense) and Check Interest (Income)—these will be used by all defined checking accounts. The first account you define is your personal checking account on line 100. After entering the words “Personal Checking” (you have 18 characters to play with),

you hit Return and go on to the account. Across the top of the screen are the labels Asset, Check, Expense, Income, and Liab. (for Liability). If you want to use any of these labels, you press only the first letter and the rest of the label appears. In this instance we will type in C for Check and move on to start a balance. Here we enter \$200 (without the \$ sign) and press Return and go to the Monthly Bdg. which is normally entered next to December, and the miscellaneous budget disappears and we go to the next line. After all of our income has been added in we now have a net annual budget balance of \$31,100. Ah,

Here we change the account number to 150 and start entering account expenses—mortgage interest, cash, house, furniture, cash value, car interest, loan interest, Visa insurance, car, stocks and bonds (assets), and Visa and MasterCard liabilities). You don't have to enter amounts for thousands of dollars, or zeros, we now go to a new screen to enter the rest of our expenses—MasterCard

Press Esc = Field Backup, Alt Edit, Dpts

Net Annual Budget Balance: 0.00

LINE	ACCOUNT NAME	TYPE	START BALANCE	MONTHLY BUDGT	VARIABLE BUDGET
100	Personal Checking	Check	200.00	0.00	
150	Cash	Asset	50.00	0.00	
200	House	Asset	100,000.00	0.00	
210	Furniture	Asset	10,000.00	0.00	
220	Cash Val Life Ins	Asset	2,500.00	0.00	
250	Car	Asset	4,000.00	0.00	
280	Stocks & Bonds	Asset	2,000.00	0.00	
300	Visa	Liability	400.00	0.00	Jan 0.00
310	MasterCard	Liability	200.00	0.00	Feb 0.00
350	Personal Loan	Liability	2,000.00	200.00	Mar 0.00
400	House Mortgage	Liability	80,000.00	200.00	Apr 0.00
450	Car Loan	Liability	3,500.00	100.00	May 0.00
500	Paycheck	Income	0.00	3,000.00	Jun 0.00
510	Interest Earned	Income	0.00	50.00	Jul 0.00
520	Miscellaneous	Income	0.00	50.00	Aug 0.00
				[Variable]	Sep 0.00
					Oct 0.00
					Nov 0.00
					Dec 500.00

After you've saved your transactions (left), you will proceed to the Modify Check Account Data display.

Check Account Data Press <Alt-A> to List/Page Accounts

[A] Check Account--> Personal Checking
[B] Next Check----->

Accounts for
[C] Charges-----> Check Charges
[D] Interest-----> Check Interest

Account Identifiers
[E] Name(s) on account
----->
[F] Bank/Branch
----->
[G] Account Code----->
[H] Checks are-----Unnumbered

Press Choice: (or Quit)

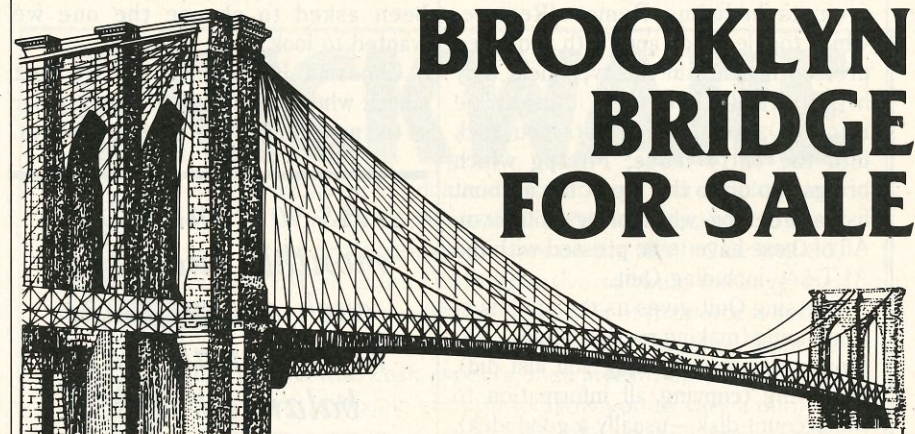
ne. If you make a mistake in entering field you simply hit Escape. If you hit non-functioning key (for example, hitting the ; instead of the L) you hear a beep indicating a mistake.

Continuing down the account list, we enter loans we have to pay each month—personal, house, and car. As we enter the monthly budget for these accounts the net annual budget balance in the top right-hand corner of the screen is keeping a running total. Since we have entered \$200, \$200, and \$100 payments for each loan our net balance now is -\$6000. That's trouble.

It's obvious from that minus sign next to the four digit number that income accounts—Paycheck, Interest earned, and Miscellaneous—are necessary to our financial success. After hitting I for Income the program automatically skips to monthly budget over the balance. With Miscellaneous we enter a variable amount so the months of the year appear in the variable budget portion of the screen. Since we are assuming we will only earn miscellaneous income at Christmas when the bonuses come out) we will enter zeros down the column of months until we get to December by hitting the Return key. Five hundred dollars is most asset, check and liability entered next to December, and the miscellaneous budget disappears and we go to the next line. After all of our income has been added in we now have a net annual budget balance of \$31,100. Ah,

charges, house, car, life and health insurance, utilities, telephone, entertainment, medical, education, newspaper/magazine, groceries, clothes, federal taxes, state taxes, FICA, contributions, and a variable expense of property taxes. It is in this section that we find that account numbers do not have to be entered sequentially and that we don't have to worry about keeping all of our expenses together, all of our liabilities together, etc. For example, in the mid-

dle of all of these expenses (right between insurance and utilities) appears Account #179 Savings as an Asset with a starting balance of \$800 and a monthly budget of \$95. We also find out here that if we want to change the account numbers as we go along we can but if we don't want them changed, pressing Return allows us to skip the account numbering step and just enter the account name. Our Net Annual Budget balance is now \$1820.

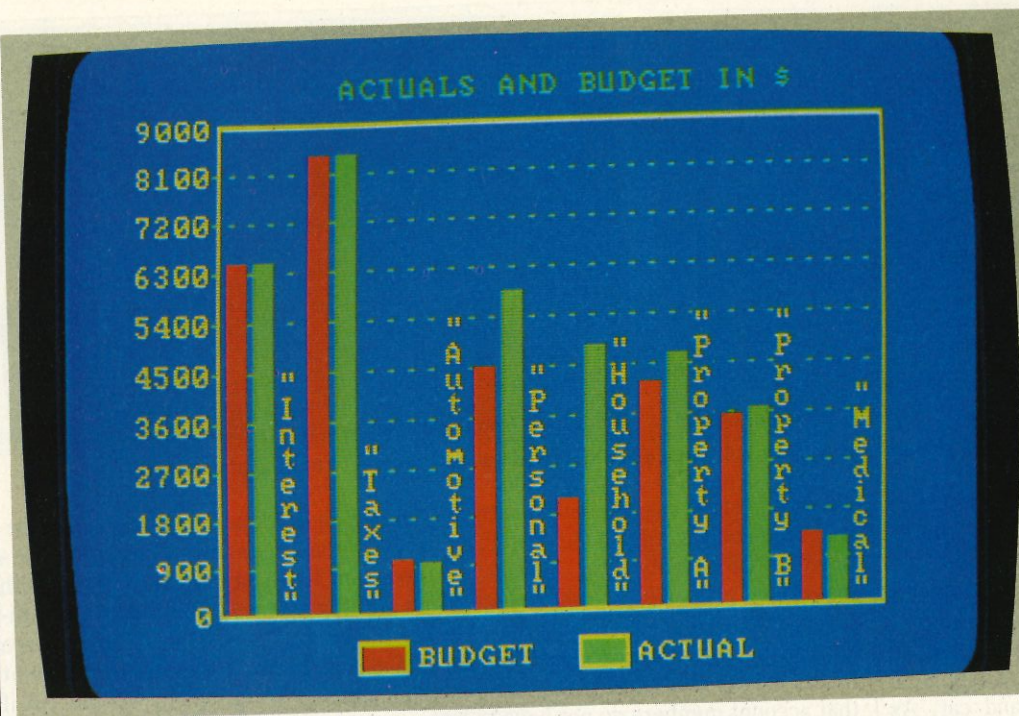


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From this graph you can see how your budgeted expense figure compared with your actuals.

After choosing Income Statement from the menu on the left, you define your report from the menu on the right.

Now that all the accounts are defined we press ALT-E (for edit) to tell the program we're finished, and we can edit any of the information using the up and down arrow keys. There are also new prompts including Remove/Restore, which toggles back and forth and when pressed appears in the type field (any highlighted type field cannot be removed); New, which puts you back into the entry mode; Firstpg which brings you up to the top of the account list; and Lastpg, which brings you down. All of these have to be pressed with the ALT key including Quit.

Pressing Quit gives us the options of Continuing (making more changes), Exiting (erasing everything you just did), or Saving (copying all information to the account disk—usually a good idea). When you save your work you are presented with a status screen that tells you that everything you have just done is now saved and complete.

After the saving routine, we are automatically put into the modify checks routine in which we see our checking account data. Here we can change our check writing information—next check number, names on the bank account, bank account number, and the accounts for check charges and interest. By pressing ALT-A we can get a list of all of the checking accounts, assets, liabilities, expenses, and income accounts as set up in the Define Accounts section. Since we have only

designated one checking account (personal checking) we obviously can't choose another, so there is no choice letter next to that entry. If there were other checking accounts we would have been asked to choose the one we wanted to look at.

Choosing B will bring us to Next Check where we can enter the number of the next check we are going to write.

As you enter the monthly budget for each account, the net annual budget balance keeps a running total.

Let's make it number 999 (the maximum is 99,999,999 and only the last four digits will show up on any reports we will do later), then hit Return—this number will be used later for prompting in the transaction section. Name(s) on account (maximum of 32 characters for both), and Bank/branch are self-explanatory, and G (account code) is the bank number on the checkbook (15 characters). The H selection toggles the Checks Are prompt from pre-numbered to unnumbered. Accounts for C) Charges—Check Charges and D)

Interest—Check Interest are used you have other accounts. Both will be used in the bank account reconciliation when we get there. P saves everything to disk and drops us back in the Menu.

The program has automatically selected C (Enter Transactions) as our next mission. This display is the menu frequently used, the documentation says. Before we can start entering transactions, however, we have to enter the Base account, which in most cases is the checking account. The account selection screen appears. We choose A) Base Account, enter PE (which automatically becomes Personal Checking, so you not only don't have to know how to spell it, you don't have to type it either), hit Return twice, and the screen displays another menu. The screen has our A) Personal Checking Account on the top, B) the Current Date (used for automatic transactions) and C) the Next Check (used when entering transactions or processing automatic transactions). Next is Auto Transactions in which D) Auto Entry (the setting is OFF and toggles to ON), then List (which displays the first 16 transactions of the auto entry set number), Release Set... off (used to delete auto transactions), Next is Followup Action—G) Transaction Report... OFF, and H) Check Writing... OFF. If all the settings are acceptable, we press P for Proceed to

the next screen—transaction entry.

Always trying to be difficult, let's select D) and Auto Entry... Set 01 (New) comes up, hit P, and be presented with the Enter Transaction Display. The check number has already been entered as our previously specified 999. Here we enter any transactions we plan on using again. For the fun of it, let's try Visa and Car Loan as payments we always make (in my case, these two payments are always on my schedule), hit Edit and Quit, Save these to disk and go back to the Account Selection menu. Here we'll find that the new Auto Entry is now old and Set 02 is (New).

Because we have already entered automatic entries, the first two transactions on our Enter Transactions screen will be check numbers 1001 and 1002 (remember: the last check number was 999), and payments to Visa and Car Loan have already been made. This portion looks like a regular check register. The top portion of the screen contains the previously entered account list and you can page through using ALT-A.

To enter a deposit, such as a paycheck, we'll hit D under CHK#, place of employment under transaction description, and then the * key, which allows us to split deposits or payments, just as your paycheck is split by the government. Tax does not apply so we hit Return, and, finally, we enter the net amount of the paycheck, \$2520. We automatically go to Dist. Account from this entry and enter pay (which turns into Paycheck even if you enter it in lower-case), Y for Yes under taxable, and 3000 for amount under check (no dollar sign is necessary). Then we enter

Fed (for Federal Tax), Y in the taxable category, and the amount of the tax is automatically placed under the deposit category so everything balances. The same procedure applies to State Tax and FICA. Hitting the * key again will stop the multiple-account distribution, and we can go on to entering the next check.

We can also make multiple payments to the same place. For example, if you

pay both your mortgage and your personal loan to the same bank you can enter the bank name as the transaction description then hit * key, enter the total amount, and then break it out separately underneath. When you are done you can save it and the program will update your accounts.

Now that we've entered all our transactions, let's try to edit some of them and see what happens. So we choose D)

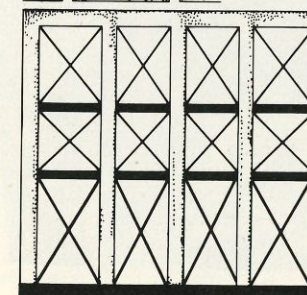
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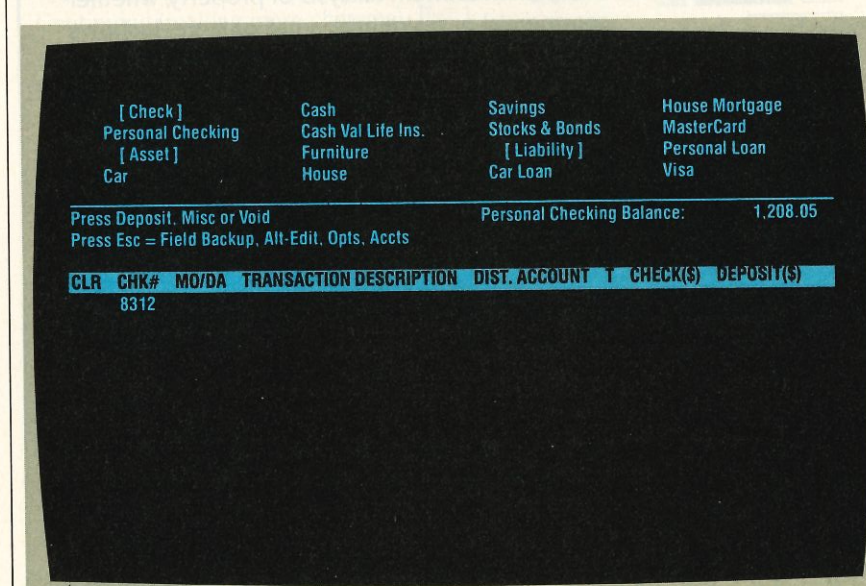
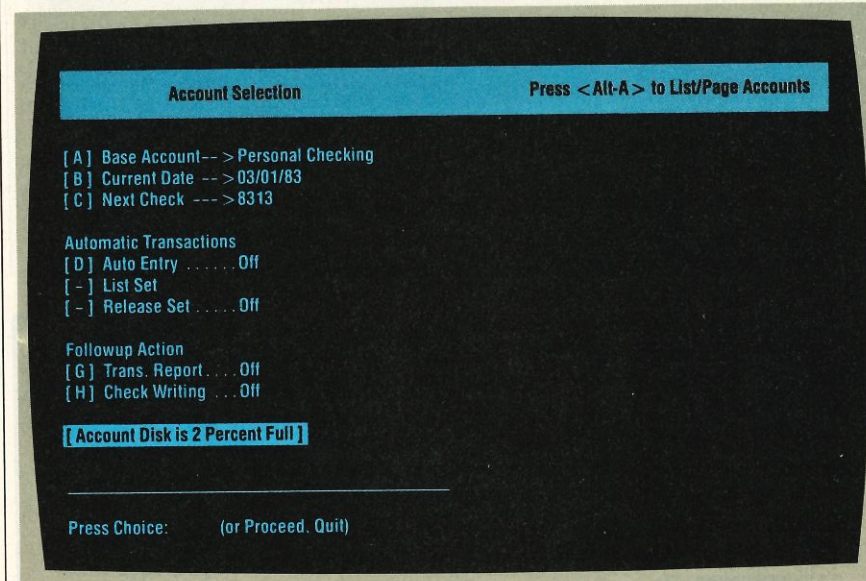
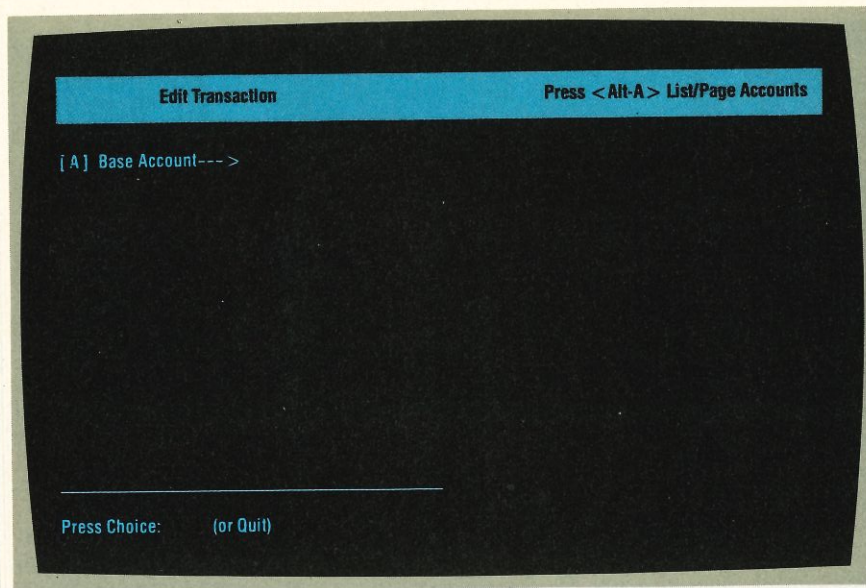
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Edit Transactions (clever, huh?) from the Main Menu and P (still means Proceed). The documentation says there are two displays here: Edit Transaction Query and Edit Transaction Update.

The first screen we are presented with is the base account prompt again from the main menu. Since we still only have the personal checking account, we hit A, type in pers to get Personal Checking, hit Return again, and the screen is filled with Transaction Query Criteria—B) date range (since we only entered our checks on 01/01/84 the date range is from 01/01/84 to 01/01/84); C) checks (999-1008 are the ones we have to choose from because those are the ones that have already been transacted); D) deposits (this item toggles back and forth from Yes to No and Yes means the transaction includes deposits, other (this item also toggles from Yes to No and Yes selects Miscellaneous and void transactions); ordered by (date); G) tax item (all selects both tax and non-tax items); H) cleared item (all selects all cleared and non-cleared items); I) title (blank. Here you can enter partial transaction descriptions—the manual says, for instance, you can search all the medical transactions for Dr. Jones by entering Dr. J.); J) amount (blank. Here you can enter specific amounts—for instance, you may remember the amount of a check but not the date you entered it); K) account (This selection restricts selection to certain accounts. Up to four accounts may be entered but we only have one.)

Here we'll leave all the items as they appear on the supplied query sheet except for item I) title. Let's change it to Nat., hit Return, and then P. The screen changes and the program begins to search through the data base we have created with our transactions. First we see the Maximum Retrieval Count... 11, then Maximum Retrieval count... 1, and Actual Retrieval Count... 1. Then the screen changes back to the checking account register and check # 1008 which we wrote to National Bank for the car and personal loans comes up with a balance. If you don't specify any restrictions

The editing function lets you call up an account and enter new transactions or update other information.

tions you are presented with all the transactions you made. The deposit appears on top and all the checks underneath with the balance in the corner. On the top of the screen is the listing of all the accounts you have previously specified.

Back to the main menu. Working our way through all of the options, we are now at selection E, Transaction Report. Again we have to enter the base account: Pers. for Personal Checking and the same transaction query criteria is presented. All criteria is satisfactory the way it comes up so we'll press P and the program searches the account disk for all appropriate listings—which is all of the listings. The next screen is Select Output Device—A) Output Device... Screen (this option toggles back and forth between Screen and Printer), B) Transaction Output... Full (this toggles between Full, which displays all detail for multiple account distributions; Compressed, which displays a summary total for multiple account distributions with the account name multiple accounts; and Off, which deletes all transaction detail and only the account summary report is produced.

Let's leave the choices the way they are and we'll get a transaction report that is titled Transactions Activity Summary For: Elli (the account disk's name) across the top. It is broken out in columns starting with tax, then check number (under which deposits are listed), then date, transaction title, distribution account, and then amounts of checks and deposits separately. Escape gets us to the Account Summary Report which is also titled Transactions Activity Summary For: Elli across the top, and is broken out by account number, name and type, then entry number, total amount and current balance. Escape brings us back to the main menu.

Our next option in Dollars & Sense is choice F) Reconcile Bank Statement. When chosen, the same transaction query screen we are used to seeing by this point in the program appears with one exception: the cleared item says uncleared only. It is here that we balance our checkbook by marking those transactions which have cleared the bank account in our records, entering check charges or interest earned, and then making corrections to balance the

The graphing mode will show actuals vs. budget, monthly net income and monthly net worth in bar graph form.

bank statement to our transaction records.

We proceed through the choices and see Dollars & Sense searching our data base in which there are 11 transactions. All of the checks are uncleared at this point so the transaction statement lists all the checks we had entered.

The cursor is positioned in the cleared check area of the statement. To mark a transaction as having cleared the bank we just enter a C before each transaction that appears on the statement. The cursor automatically moves to the next item. If you want to skip an item (meaning it has yet to clear the

bank) you use the up and down arrow keys. If you make a mistake you just enter a U over the C and the C disappears.

When we are done marking our cleared transactions we press ALT-Quit and then Save the changes to disk. The reconciliation status display appears which helps us match our statement to our records. All we have to do here is add the check charges and interest to the status display or make the changes on the edit transactions display. The program tells us how many entries have and haven't cleared. In this case, we cleared five checks and a deposit, and left five checks and no deposits uncleared. Therefore, we just add in \$1.50 in the additional charges category for extra bank fees like overdrafts, stop payments, low balance, checks, etc., and \$4 for additional interest, check the statement balance, and update the record balance (this will change the starting balance on the Account.) Quit will save our changes on the disk and return us to the main menu.



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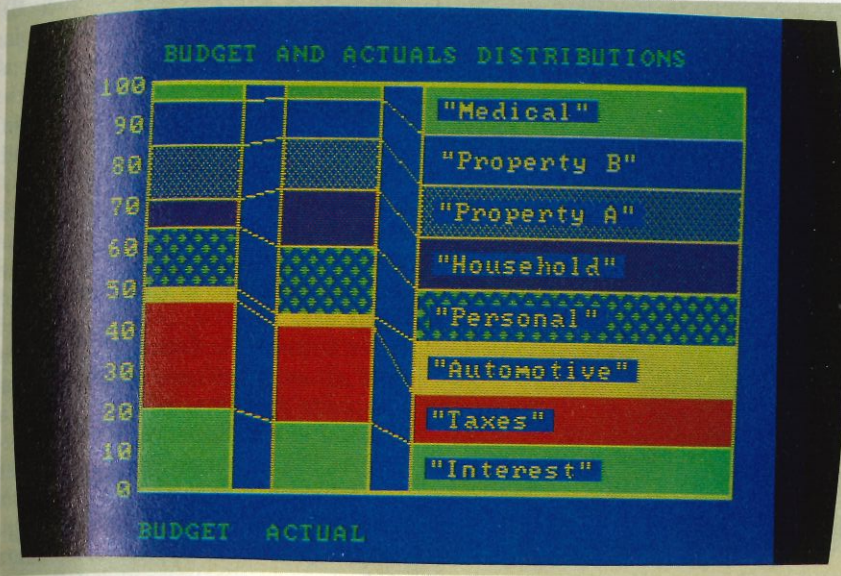
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DEALER INQUIRIES INVITED



TEST DRIVES



This chart compares expenses in bar graph form.

When we get back to the Main Menu we realize that we are now at the point in the program where we can start to compare some of our data. Selection G) Prepare Reports, presents us with the select specific report screen on which we are asked to choose A) Output Device ... Screen (this item toggles to Printer if desired), B) Account YTD (year-to-date) Summary (one line per account—last update, number of entries, actual and budget totals, tax amount or current balance), C) Monthly Budget Totals (accounts by type with monthly budget amounts and totals), and D) Monthly Actual Totals (accounts by type with monthly actual amounts and totals). The Budget Versus Actuals Reports include E) Income Statement (this gives you income versus expenses and is available by YTD, quarter, annual, monthly detail, and selected accounts), F) Balance Sheet (assets versus liabilities and is also available by YTD, quarter, annual, monthly detail, and selected accounts), and G) Cash Flow (distribution of income and is also available by YTD, quarter, annual, monthly detail, and selected accounts).

If we press E for Income Statement and P for Proceed we'll be presented with some additional reports. The available Quarterly/Annual reports include reports by individual quarter (with this option you would have to specify first, second, third and fourth quarters), all quarters to date, an annual report (this option gives you information on all quarters for a year and monthly detail),

a summary report (budget, actual totals, and over/under comparison), and a detail report (separate reports by account, actual totals and over/under comparison).

We'll press 1 next to quarter the quarter prompt (which after we press Return will read First) to see the first quarter of our year (since we have only entered transactions for the first day of January, the first quarter seems a likely place to start) and we'll get an income statement that lists income accounts (paycheck, interest earned, miscellaneous, and check interest), budgets (3000, 50, 0, and 0), actuals (3000, 0, 0, and 4), then a comparison of budgets. We are \$4 over budget on our check interest and \$50 under budget in the interest we earned for a total of \$46 under budget.

If there is more than one page to a report (such as the YTD report in which all accounts are listed) you will see the cursor in the bottom right-hand corner of the screen. To see the next page just hit any key. If you keep hitting a key (some of the reports we see here were up to seven pages long) the program will return you to the Choose A Report menu for your next choice. If you simply want to get back to the menu and terminate your report, just press Escape.

Back on the Main Menu we should choose selection H) Prepare Graphs. In the Select Graphs display you have the choice of A) Actuals versus Budget (a bar graph where percents of accounts

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Edit Transaction

Press <Alt-A> to List/Page Accounts

[A] Base Account--> Personal Checking

Transaction Query Criteria

[B] Date range--> 01/01/83-03/01/83
 [C] Checks--> 8301-8312
 [D] Deposits Yes
 [E] Other Yes
 [-] Ordered by Date
 [G] Tax Item All
 [H] Cleared Item All
 [I] Title-->
 [J] Amount-->
 [K] Account(s)--> All

Press Choice: (or Proceed, Quit)

[Check] Cash Savings House Mortgage
 Personal Checking Cash Val Life Ins. Stocks & Bonds MasterCard
 [Asset] Furniture [Liability] Personal Loan
 Car House Car Loan Visa

Edit Transactions Personal Checking Balance: 1,208.05
 Press Alt-Quit, New, Insert, Remove/Restore, FirstPg, LastPg, Opts, Accts

CLR	CHK#	MO/DA	TRANSACTION DESCRIPTION	DIST. ACCOUNT	T	CHECK(\$)	DEPOSIT(\$)
	Dpst	03/01	National Motors				2,520.00
			Paycheck	T	3,000.00		
			Federal Taxes	T		250.00	
			State Taxes	T		50.00	
			FICA	T		180.00	
	8301	03/01	Cash		100.00		
	8302	03/01	Auto Club		47.99		
	8303	03/01	Blue Cross		80.00		
	8304	03/01	Gas Co		34.82		
	8305	03/01	Electric Co		47.99		
	8306	03/01	Water		23.03		
	8307	03/01	Bell System		45.62		
	8308	03/01	Jeans & Shirt		22.50		
	8309	03/01	Church		10.00		
	8310	03/01	National Bank		300.00		
			Car Loan			100.00	

TRANSACTION ACTIVITY SUMMARY FOR: D.W. Jones

PAGE 1

ACCOUNT: Personal Checking		DATE LAST ENTRY: 03/01/83		AMOUNTS (\$)	
C	T	CHECK	DATE	TRANSACTION	DISTRIBUTION
L	X	NUM	MO/DA	TITLE	ACCOUNT
		Dpst	03/01	National Motors	
	T			Paycheck	3,000.00
	T			Federal Taxes	250.00
	T			State Taxes	50.00
	T			FICA	180.00
		8301	03/01	Cash	100.00
		8302	03/01	Auto Club	47.99
		8303	03/01	Blue Cross	80.00
		8304	03/01	Gas Co	34.82
		8305	03/01	Electric Co	47.99
		8306	03/01	Water	23.03
		8307	03/01	Bell System	45.62
		8308	03/01	Jeans & Shirt	22.50
	T	8309	03/01	Church	10.00
		8310	03/01	National Bank	300.00
				Car Loan	100.00
	T			Car Insurance	200.00
		8311	03/01	Mortgage Co	800.00

make up a composite account), B) Actuals/budget values (a bar graph in the Account Disk), C) Account contribution to total (a distribution graph in the Account Disk), D) Monthly actuals/budget (also a bar graph), E) Monthly net income (a bar graph—income and expenses), and F) Monthly net worth (a bar graph—assets and liabilities).

We'll choose A) Actuals versus budgets as our graph, and Assets as our composite accounts (when choosing composite, which can be listed by hitting ALT-A, you must be sure to enter the name of the composite in quotes. Dollars & Sense then searches through the data base for all applicable accounts and we are presented with a full color bar graph (if you have a color monitor hooked up to your personal computer, of course).

All of the graphs can obviously be used for presentation purposes. In business, but they are also useful for budgeting purposes. For instance, the chart that we produced, Actuals versus Budgets, will show how we did in either meeting or exceeding our budget.

The last three selections on the Main Menu are I) Account Disk Utilities, J) Write Checks, and K) Modify Composite Accounts. The last two begin using the program; Suggested self-explanatory and deal with the hardware and applications you will be using. The first, however, allows you to create separate account disks for your home, business, tax preparation, separate years. It also allows you to back up the account disks you have. I think by now you have a pretty good idea about the power of Dollars & Sense, and have probably thought of a million different ways you can apply this product. But the best thing about this program is that by spending a few minutes each week updating or adding information to your accounts, you'll be able to produce graphs and reports that will help you get a handle on your personal finances.

This utility section includes two plays: Account Disk Utilities and New Disk. The first display includes

The transaction activity summary (bottom) is generated from a variety of criteria (top) and elements (middle).

following choices: A) Title (this is the name on the Account Disk), B) Select Account Disk (this option allows you to switch over to a different Account Disk), C) Begin New Account Disk (this allows you to start a new Account Disk), D) Extend Account Disk (you would use this option when you're nearing the maximum number of transactions or if you are beginning a new year and want to make a new disk), and E) Update Extension Account Disk (you would select this option if you are making changes to an Account Disk that has an Extension Disk).

If we choose C) Begin New Account Disk or D) Extend Account Disk we will be brought to the Start Account Disk screen that we saw when we first entered Dollars & Sense. The only difference will occur when, after we select D and enter the title, month and year, we will have two additional questions to answer: Extension of Year (used when just creating a new disk because we are practically over-extended) and Begin New Year (self-explanatory).

Now that we've been through the Main Menu step by step, we have virtually been through the entire program. The only thing left to say is that the documentation is superb. It is provided in a three-ring binder and is split up into

five different categories: Contents; Getting Started Quickly, which explains all the required information necessary to use the program; Suggested Applications; Working Reference Guide, which gives you a handy and quick way to locate and learn specific program capabilities; Getting Results, which shows you some sample graphs; and Error Assist, Glossary and Index. I think by now you have a pretty good idea about the power of Dollars & Sense, and have probably thought of a million different ways you can apply this product. But the best thing about this program is that by spending a few minutes each week updating or adding information to your accounts, you'll be able to produce graphs and reports that will help you get a handle on your personal finances.

—Elli Holman

Composite Account Definition

Press <Alt-A> to List/Page Accounts

[A] Create New Composite Account
 [B] Modify Composite Accounts

Press Choice: (or Quit)

Modify Composite Accounts

Press <Alt-A> to List/Page Accounts

[A] Name--> "Assets"
 [B] New Names--> "Assets"
 [-] Type--> Asset

Cannot Change Type—Has Accounts
 Press Choice: (or Proceed, Quit)

Composite Account Set Definition

Press <Alt-A> to List/Page Accounts

"Assets" Asset
 Press Alt Quit, New, Remove/Restore

ACCOUNT NAMES

Personal Checking
 Cash
 House
 Furniture
 Cash Val Life Ins.
 Car
 Stocks & Bonds
 Savings

Playing At Home For A Million

Here's a way to get on a game show without making the trip to Hollywood or feeling the heat of television lights

■ **MILLIONWAIRE** BrainBank, Inc., 200 Fifth Ave., New York, NY 10001, (212) 686-6565; runs on Apple II Plus, IIe and IBM Personal Computer; \$34.95; retail.

"Hi," blurts out the plaid-coated game show M.C. with what little sincerity he can muster. "I'm Bob Brainbank, your host for this round of Millionaire!"

Typically, applause thunders from the star-struck crowd in response to the flashing neon commands above them. "I'll be giving you instructions to guide you through this game," Brainbank continues with a heavy tone of anticipation in his voice, "and hopefully to your goal of one million dollars!" Oooohs and aaaahs flood forth from the audience.

"Here's how we play," he continues, as the noise level settles to an excited murmur. "The game consists of a series of rounds. Each round offers the players up to four categories of questions with

different odds from which to choose. The harder the question, the higher the odds."

"At the start of the game, you will each be given \$10,000 to wager," Brainbank repeats from memory, interrupted by a small ooooh and a couple aaaahs at the mention of ten grand. "You can wager anything from a minimum of \$1000 up to your entire bank account—if you dare."

"As always, I'll be assisted by the lovely and talented Donna Diskdrive," Brainbank coos. The scenario demands that he gesture with one arm toward the certainly lovely but dubiously talented brunette, who waves back from stage left. "Say 'Hello' to our contestants, Donna."

Ah, the chance to win a million dollars on national television. Such a rare opportunity is enough to make the most serene of us act a little weird. But how

do I get on these shows? I don't make frequent trips to Hollywood and the "\$10,000 Pyramid" usually baffles me as much as the secrets of its genuine Egyptian counterparts.

Enter the jovial Bob Brainbank and his assistant Donna Diskdrive. The hypothetical dynamic duo of daytime TV, you see, are actually my guides through Millionaire, the TV-style quiz game from BrainBank Inc., for my Apple computer. The description and rules of the game as eloquently related by Mr. Brainbank are for real and the TV part... well, I go a little carried away in all the excitement. The visage of Brainbank will appear only on the screen of the computer and I'll have to gather my own audience if I want any oooohs or aaahs.

Millionaire does give me the chance to earn a million dollars, albeit comput-

er money that is redeemable for nothing more than a little fun. And to earn this kind of loot, I'll have to watch the odds, wager my money carefully, keep my eyes off Ms. Diskdrive and—most importantly—answer both swiftly and accurately with tidbits of general knowledge. "General knowledge" is game-show talk for trivia.

The TV quiz show is an institution—uniquely American in its broad appeal. What these shows are inevitably based on is trivia: Those little facts which perhaps lack the importance of the answer to "What is truth according to Plato?" but which are usually a good deal more entertaining. "What was the maiden name of Abraham Lincoln's wife?" "What was Robert Young's pet name for his stage daughter in the TV series 'Father Knows Best'?" Not all of the questions are *this* trivial, but they can get a little obscure.

Nevertheless, the wide appeal of trivia lives on, demonstrated in notable fashion recently by the phenomenal success of the "Trivial Pursuit" board game. Millionaire baits you with the same lure of brain-wracking trivia, though in a much more limited range than Trivial Pursuit and the result is an almost uncontrollable urge to pit yourself against the postscripts of people, places and things.

Once Bob Brainbank announces that "it's time to play our game," I have to enter my name (it will appear quite often) and select how many contestants are going to participate in this potentially lucrative venture. I'm going to go this round alone, but up to four players can join in and it really is a lot more fun when you're competing against another trivia freak. More than one player, either in this game or in a board game like Trivial Pursuit, does present one problem: At least one person (usually one whose turn has not yet arrived) always seems to know the answer and can't resist the urge to help you a little. So remember, no shouting out answers while I'm going through this.

The only other preliminary choice I have to make is the skill level I want to use during play. A "novice" gets 15 seconds to give the correct answer to a question posed by Brainbank, an "intermediate" player gets 10 seconds and a "genius" has but five. Despite my moth-

er's long-standing suspicion that she had given birth to another Einstein, I'll stick with intermediate.

The game screen which I'll see throughout Millionaire now appears in the form of three divided areas: At the top third of the screen, my name and beginning balance of \$10,000 are listed along with three small boxes which I'll discover the purpose for shortly; in the middle portion I'll receive instructions, questions and snide comments from Brainbank; and at the bottom, the categories and answers to choose from will be presented.

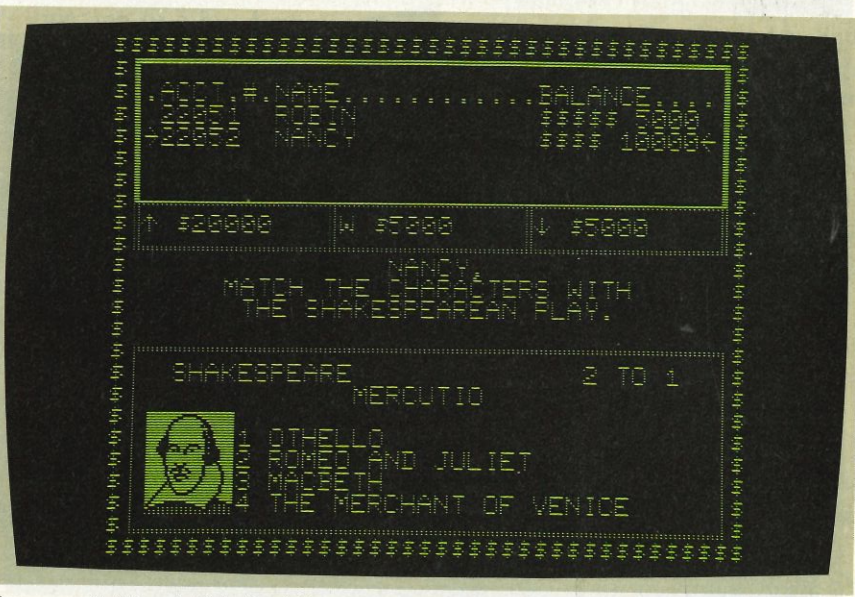
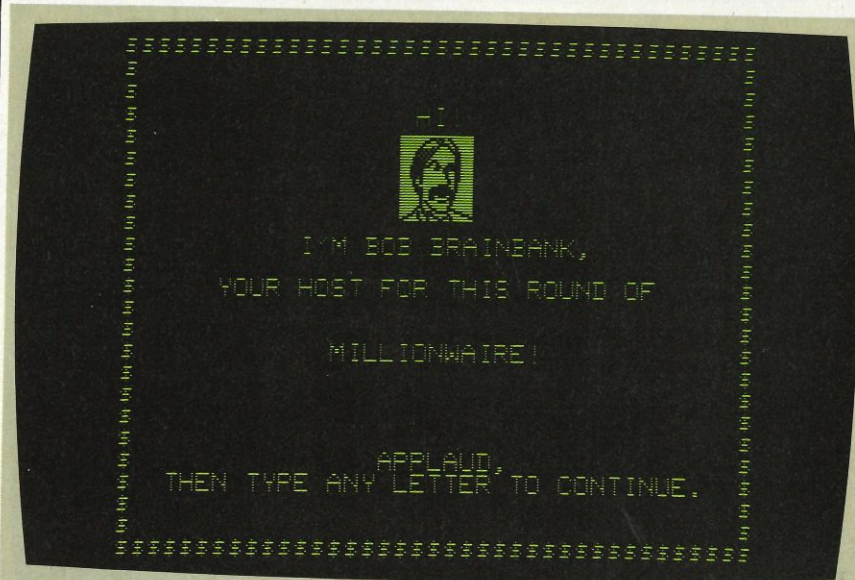
Millionaire has no spectacular graphic displays. Brainbank himself is depicted only a few times during the game's introduction and Donna Disk-

drive—for all her imagined beauty—is heard whirring occasionally but is never seen. Small drawings do accompany each selected category (the White House for the Presidents category, for example), but the Millionaire screen is largely composed of just the necessary words and numbers. Only if I can attain that elusive million dollar goal will I get any real graphic refreshment.

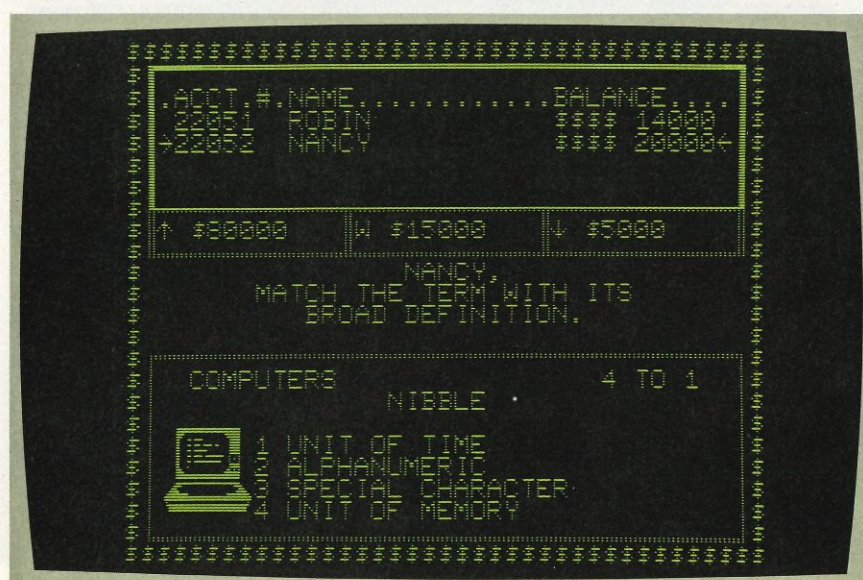
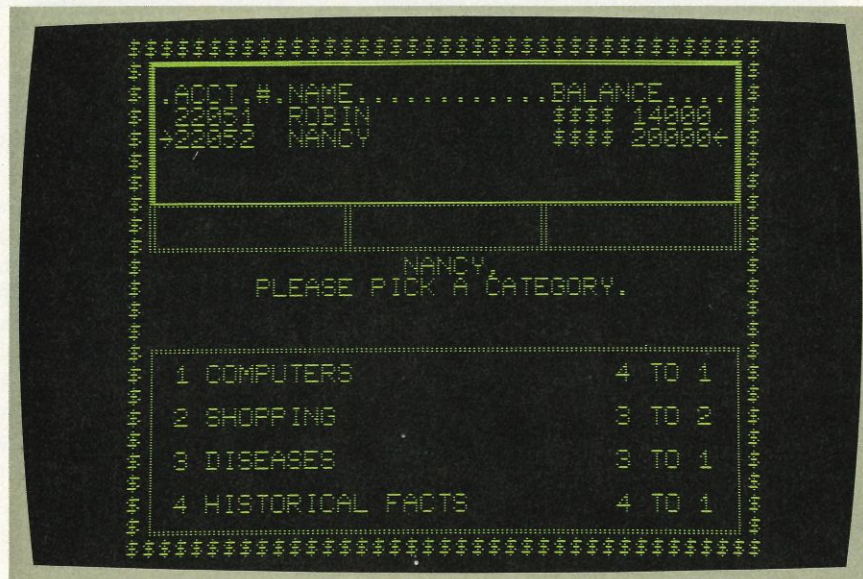
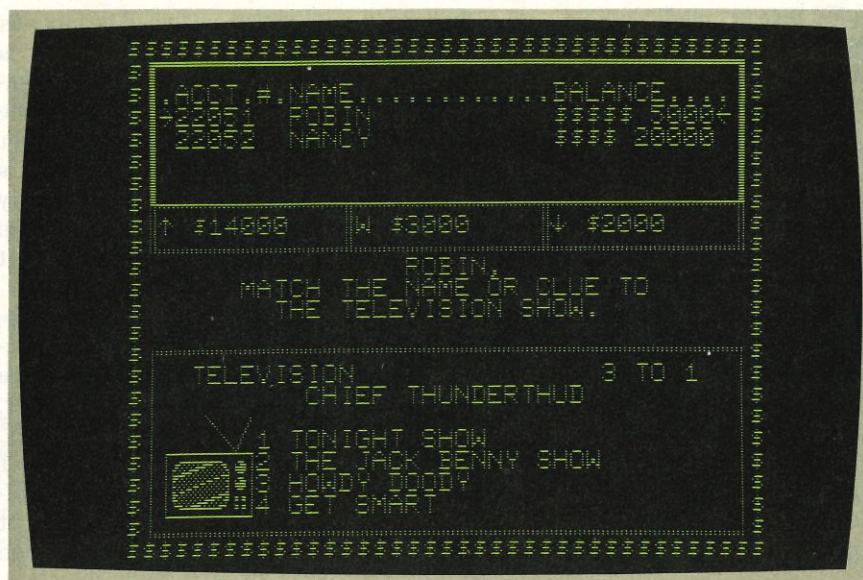
Now I'm ready. The first four categories to confront me are landmarks, occupations, hobbies and colleges. There are also, as our host mentioned earlier, odds assigned to these categories. Landmarks is the longshot at 3-to-1 odds, which means it'll be a more difficult question but will pay off big if I get it right. Why not. Brainbank then



Millionaire is a TV-style quiz-show game that will test your trivia knowledge.



Your cordial host, Bob Brainbank, will guide you through Millionaire's play.



checks with me to make sure that landmarks is what I selected and asks me for my wager. I have to lay down at least \$1000 and I think I'll put down two grand just to play it safe. Remember those three small boxes toward the top of the screen? As it turns out, one shows my wager and the other two indicate what my new balance will be if I answer correctly or incorrectly.

"What's the matter, chicken?" teases Brainbank. "Only kidding." Just what needed—a few words of encouragement from the Monty Hall look-alike. Here's the question: Match the landmark with its proper location—Acropolis. My choices are New York, Moscow, Athens and London. No problem. Hitting the number 3 for Athens, I'm congratulated with "Beautiful!" from Brainbank and a tune begins to wail.

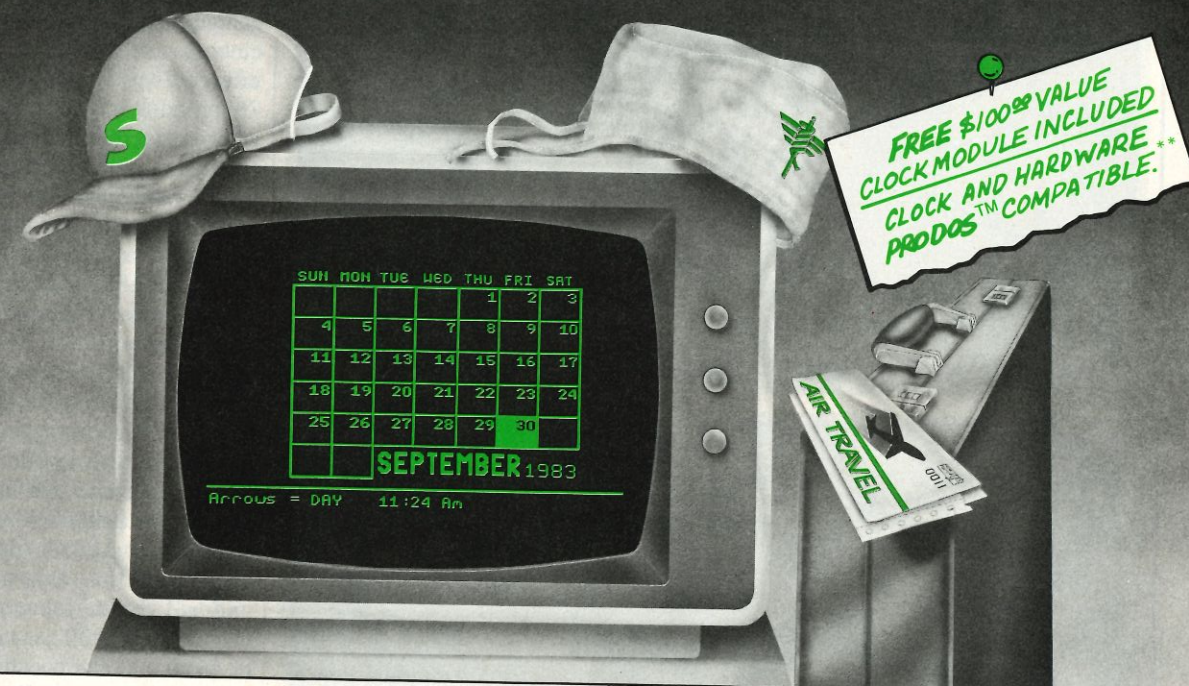
"Are you playing a game in there?" No, that wasn't Brainbank. That was one of the editors in an adjoining office inquiring about a noise one doesn't often hear with a word processing program. "I'm not playing," I insist. "I'm researching a new software package. Does he think I play games all day? Anyway, that brings up a small but noteworthy point. Unlike some other packages (particularly games), there's no option for turning off the sound in Millionaire. Trying to play by yourself, as a result, is not easy since this game is both noisy and contagious.

A glance at my new balance reveals that I now have \$16,000 to work with. The next four categories to test my wits are occupation at 2-to-1 odds, the human body at 2-to-1, hobbies at 3-to-1 and sports talk at 2-to-1. I'm pretty good at sports topics (or so I think) so I'll take sports talk and put \$10,000 on the line. "Aiming to break the BrainBank, eh?" quips our lovable M.C. Let's get on with it, Bob. Match the team or phrase with the proper sport—"Let." I think I've got this one, too. Ice hockey, football, tennis or boxing. It should be tennis. "You really know your stuff," exclaims Brainbank as the music starts up again. It's early in the game yet, Bob. My stash grows to \$36,000.

Computers at 2-to-1, Mathematics

Each round brings four new randomly generated categories.

Suzie's First Softball Game. . . The Two Places-At-Once Schedule . . .Meeting With The Boss.

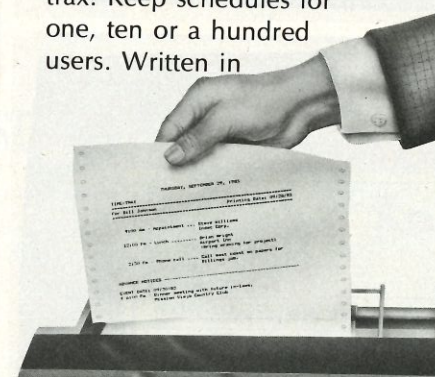


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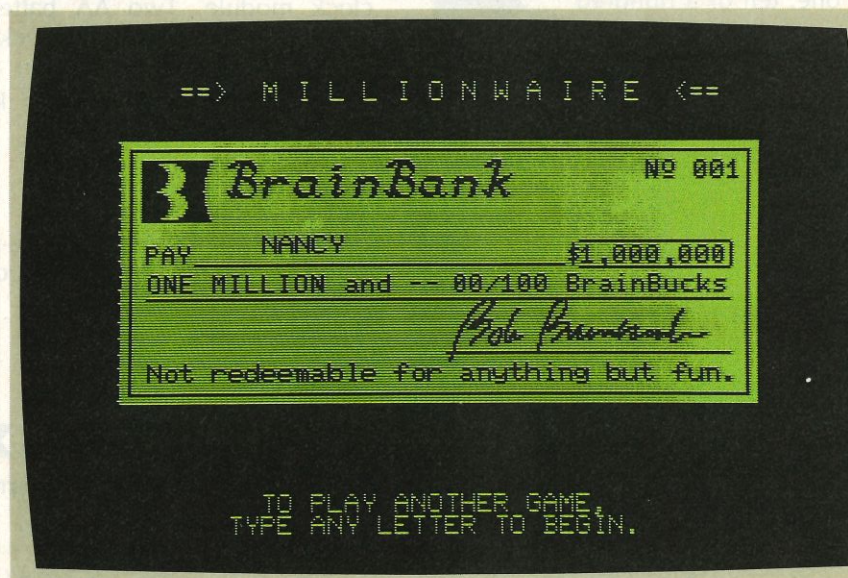
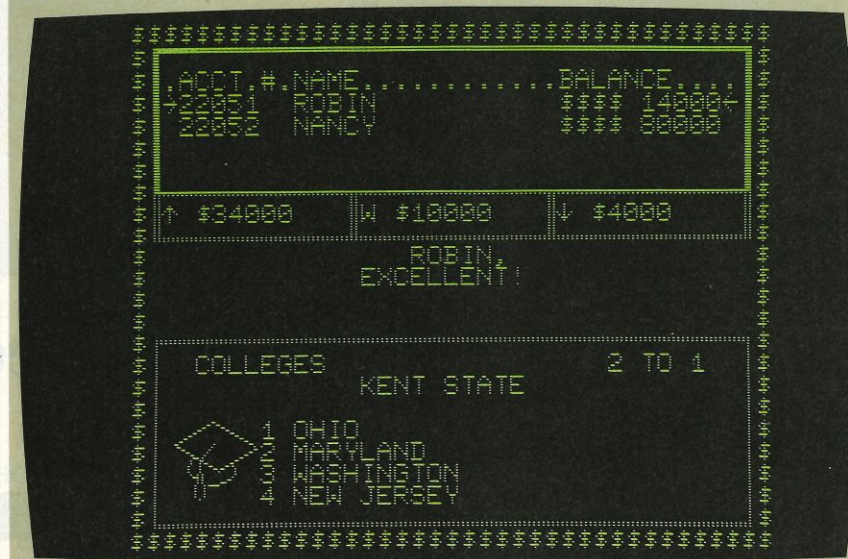
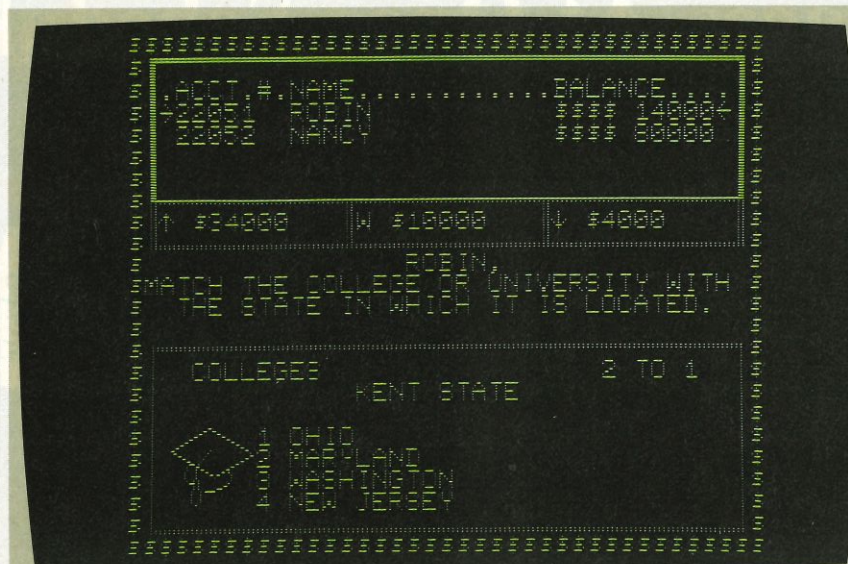
THE TIME MANAGEMENT SYSTEM

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*This offer expires December 31st, 1984.

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3-to-2, actors at 3-to-1 and colleges at 2-to-1. This one could really hurt if I miss it, but how can I *not* choose computers? I'll put down \$20,000 on this one. Match the computer term with its broad definition—"Byte." The choices are special character, unit of time, language or unit of memory. Saved from embarrassment! It's unit of memory. "A winner," barks our host. I've amassed 76 grand—not bad, I guess, but nowhere near that million.

The program, which generates categories randomly, now comes up with authors at 4-to-1, calendar at 4-to-1, computers at 2-to-1 and presidents at 3-to-1. Well, authors and calendar sound a little tough and the odds really aren't that profitable on computers (besides, I don't want to risk it again), so I'll go with presidents. This time I have to match the phrase "Voting Rights Act" with the proper president. I could've guessed this one by process of elimination (I knew it wasn't Harding, Harrison or Lincoln) but I happen to remember that this act was passed under Lyndon Johnson's aegis. My wager of \$50,000 has netted me another \$150,000 and boosted my total winnings to \$226,000. I'm really starting to like this game.

At this point, Brainbank decides that a little diversion is in order. He asks me where I'm from and, after I relate that information, he replies: "From the way you've been betting, I thought it might be Vegas." I'll take that as a compliment and continue on with my million-dollar quest.

After choosing American cities at 2-to-1 odds from the next category grouping and answering correctly that the city of El Paso is in Texas, my confident wager of \$200,000 has put my total at \$626,000—within striking distance of that one million mark. Here's where a little betting strategy can be crucial. But before I have the chance to do much more serious thinking, Brainbank interrupts my planning with another light inquiry: "What do you do for a living?" Resisting the temptation to say that I play games all day, I explain that I am a writer (no arguments right now please), which draws only a "Hmmm . . .

You'll be congratulated for each correct answer.

that's interesting" from Brainbank.

The categories which now unfold are Shakespeare, hobbies, novel characters and cartoons. Ugh. I know a little about Shakespeare but the odds aren't very exciting at 2-to-1. Cartoons, however, are at 4-to-1. And while I know very little about cartoons, the high odds mean that I would have to risk relatively little to have a shot at gaining the \$374,000 I need to win the Millionwaire game. To be exact, I need only wager one-fourth of that amount (at 4-to-1 odds) or \$93,500. Brainbank informs me that I will win should I answer correctly (I can hear the unsettled murmur of the crowd in the background of my imagination) and my question follows. Match the word or phrase with the proper cartoon—Waldo. Panic. Waldo? Who or what is a Waldo? Looking quickly at my choices, I'm pretty sure it's not "Mr. Magoo" or "Bugs Bunny." "Rocky and His Friends?" I don't think so. Time is running short. Let's go with "Crusader Rabbit" (whoever he is), and see what happens.

Wrong. My pool of luck has run dry.

Millionwaire gives you the chance to win one million computer dollars —by answering trivia questions.

What's the right answer? I may never know. Brainbank offers only the consolation of "You win a few, you lose a few"—but no right answer. This part of the game is a little frustrating. I'm left chomping at the bit for the right answer, unimportant to the scheme of life as it may be. I've never cared deeply about cartoons until this moment. I *want* that answer. But the company hedges; I can learn more by looking up such information in an encyclopedia or dictionary, they claim. About cartoons? Sounds like a pretty transparent rationale for a serious deficiency.

Back on the winnings board, I've

been knocked back to \$532,000 and presented with the categories of solar system, novel characters, authors and presidents. They all carry 3-to-1 odds, so I'll try novel characters for a change of pace. My \$160,000 wager will bring me over the top if I get this one. One deep breath . . . I'm ready. Match the character, Buck, with the novel in which he appears. Panic, part two. I know it isn't *Tom Sawyer* or *Wuthering Heights*. It's between *Little Women* and *Call of the Wild*. My time is about up—I'll say *Call of the Wild*. All right, it was a blind guess. But I won.

The screen is showered with coins and a big, fat check for \$1,000,000 is written out in my name, signed by Bob Brainbank himself. The sweet sounds of success fill the air. Suddenly, a rude interruption from a familiar voice. "Hey, are you still playing games?" Researchers, I get the feeling, will never be completely understood.

—Christopher O'Malley

For more information circle 118 on the reader's service card.

COMING UP IN THE JULY ISSUE OF PERSONAL SOFTWARE

TEST DRIVE OF SYMPHONY

Lotus Development Corporation's follow-up to their highly successful 1-2-3 package has finally arrived and it's called Symphony. We'll take you through the new all-in-one system to see if it really does make beautiful music.

TEST DRIVE OF FRAMEWORK

From the producers of dBASE II, Framework is Ashton-Tate's answer to the problem of integrating productivity tools. Our July issue will give you an in-depth look at Framework and its multiple capabilities.

Take PC-Talk For A Spin

Here's an affordable program that adds flexibility and ease of use to personal computer communications.

■ PC-TALK The Headlands Press, Inc., P.O. Box 862, Tiburon, CA 94920, (415) 435-9775; IBM Personal Computer and compatibles; \$35; direct order.

PC-Talk was one of the first communications programs written for the IBM Personal Computer and its compatibles. Since then, many others have followed. But PC-Talk remains unique. It is one program that you can test drive yourself before buying. And when you do pay for it, all its author asks—yes, asks, not demands—is \$35. It would be cheap at 10 times the price.

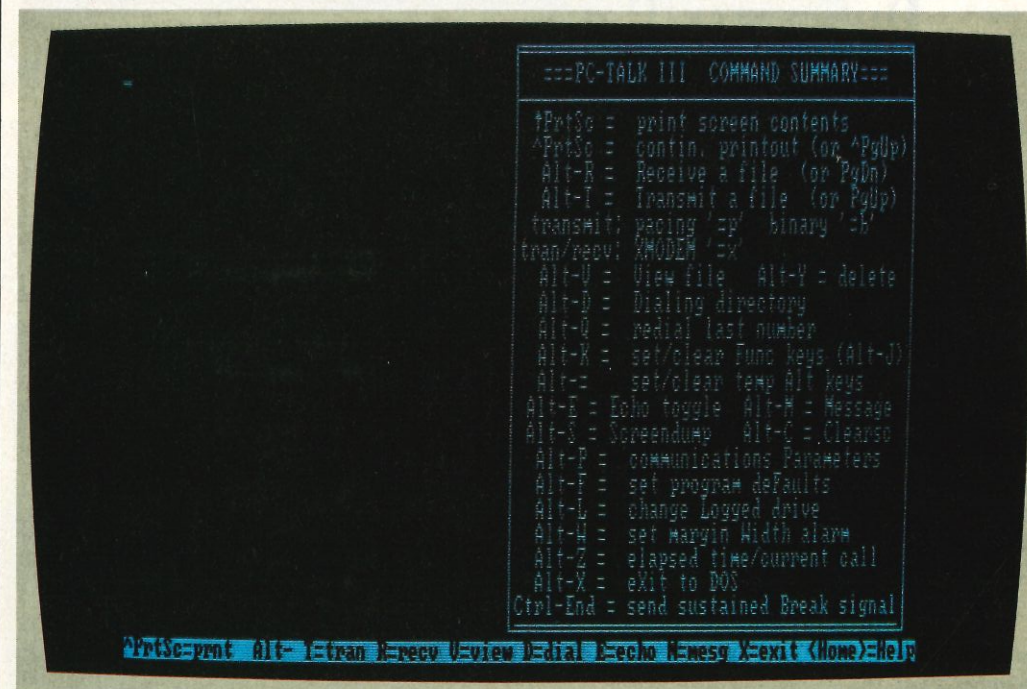
It is the first Freeware program, which means that rather than trying to fight software piracy by preventing users from copying their programs (and thus preventing them from having a back-up), the program's author encourages you to copy his program and pass it around. If you like it, he asks that you

send him \$35. You can get the latest version of the program, PC-Talk III (in BASIC version for machines with 64k memory and in a compiled, "executable" version for machines with 128k or more) by sending him two blank disks and a self-addressed, stamped return mailer (more on that below). Or, if you already have another communications program and a modem, you can get PC-Talk and even the manual for it over the phone from some of the many PC bulletin boards across the country.

Like other communications programs, PC-Talk lets you trade files with another personal computer (hooked together by a phone line and modems on either end or hooked together by a cable); it lets you talk with CompuServe, The Source and the many other computerized information sources available; it lets you send and receive electronic mail through such services as

Telemail; and it lets your Personal Computer act like a terminal on many big mainframe computers or lets you dump files into those bigger machines. But unlike many commercial communications programs, PC-Talk also comes with the closest thing to a standard for error-checking, a "protocol" called XModem that virtually guarantees glitch-free transmission (more on that too, below).

PC-Talk's manual is well-written in English, not computerese or the spreading variant dialect of that language, communicationese. But who really wants to read a manual? When you get a new toy, hardware or software, you want to start playing with it immediately. You can with PC-Talk; it gives you enough help on the screen to get going. Before getting to all the features and details of PC-Talk, let's take a spin with a call to CompuServe.



PC-Talk's first menu is a listing of commands, most of which use the "ALT" key.

When you start up the program, it gives you the address of The Headlands Press (where you're supposed to send that \$35) and tells you to hit any key to continue. When you do, the screen will tell you to "proceed" and a box will tell you that help is available if you hit the home (7) key. When you do, a list of the program's commands fills the right half of the screen. Most commands use the Personal Computer's "ALT" key. To dial out, for instance, you hit ALT-D.

After hitting ALT-D, you get a blank list of 60 phone numbers that you can fill in. (That's more than will fit on the screen, but you're told that you can move forward and back by hitting "F" or "B.") PC-Talk will help such intelligent modems as the Hayes Smartmodem dial the phone for you or it will work with acoustic modems. On PC-Talk's dialing directory, you can change a number of specifications for each phone number. For now, let's simply dial the number for CompuServe. As the screen tells you, hitting M for "manual" lets you give the program a number to dial without filling in an entry in the directory. You do that and the program tells the modem (if you have an intelligent one) to dial the number. You hear your modem emitting a tone and the other computer answering; this is the "handshake." Then the screen says "connect." You start typing, giving CompuServe your name and password. You're on your way.

If you want to save your communications to disk, you hit ALT-R, for "receive." PC-Talk will create a file on the disk but first it asks for a "specification." That's a confusing choice of words; what it really wants is simply a name. You type in "test." (The other computer doesn't see you typing the name, it won't affect your communications.) On the bright status line on the bottom of your screen, PC-Talk tells you that it is receiving file "test." If you're doing a lot of communicating and fill up the computer's memory, PC-Talk will automatically dump the excess onto your disk; you can go on as long as your disk-drive capacity allows. When you want to stop saving, you hit ALT-R again. You are free to save as many files as you want in a communications session.

To transmit a file from your disk to CompuServe, you hit ALT-T then give

PC-Talk is "freeware"—the program's author encourages you to copy his program and pass it around.

the name (or, again, "specification") of the file and PC-Talk will show it on the screen as it's sent. One nice feature: The program tells you how much time is left before the transmission will be completed, so you know whether you have time to do some business or head for the refrigerator.

You can also print out your communication while it's going on. (You'll be using a serial port for your modem, if your printer is hooked up to the parallel port or if you have a serial printer hooked up to a second serial port, then you can do this.) To print what's on your screen, you hit shift and the print-

screen ("PrtSc") key. To print out continuously, hit Control and the print-screen key. The manual warns that if you are communicating at a high speed (1200 baud instead of 300), your printer may not be able to keep up.

If, while you're communicating, you want to see another file on your disk, you hit ALT-V for "view." Other features include the ALT-Q command which will redial the last number you tried until it gets through. That feature comes in handy when you're dialing bulletin boards that are often busy. This feature is also set up for the redial feature of the Hayes Smartmodem; if your modem has a redial feature, check your modem's manual to see how to set up PC-Talk for it. ALT-Z will tell you how long you've been communicating, which is a useful feature if you're talking to a service that costs \$20 an hour or more. ALT-W lets you set a width alarm like the bell on a typewriter. Some computers can take lines only so long and the program will warn you with a beep when you're getting near that limit. ALT-C clears the screen without affect-

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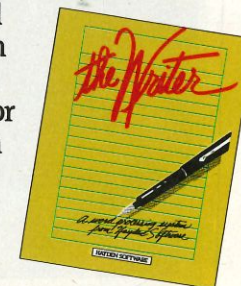
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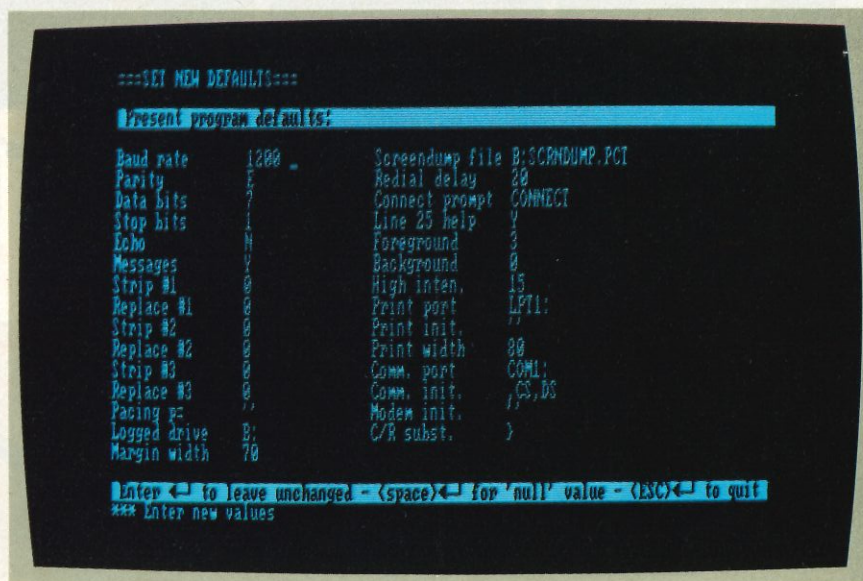
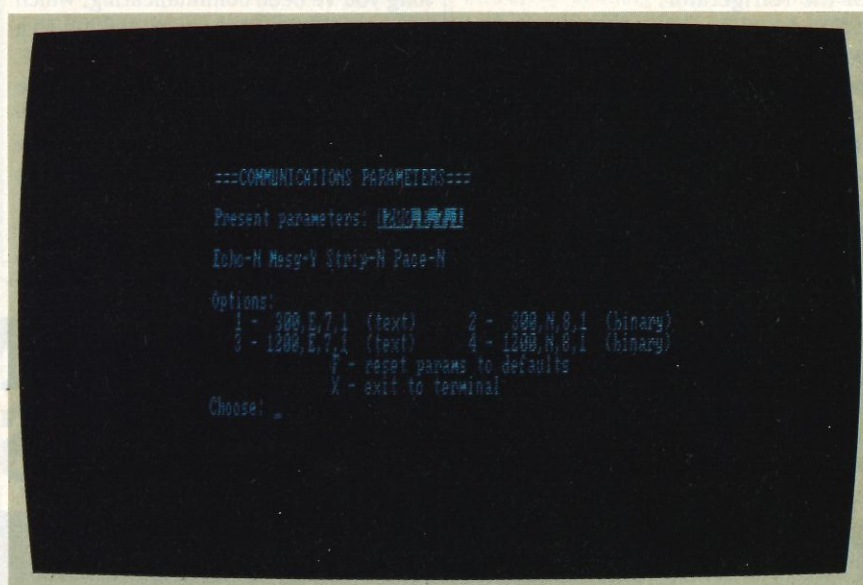
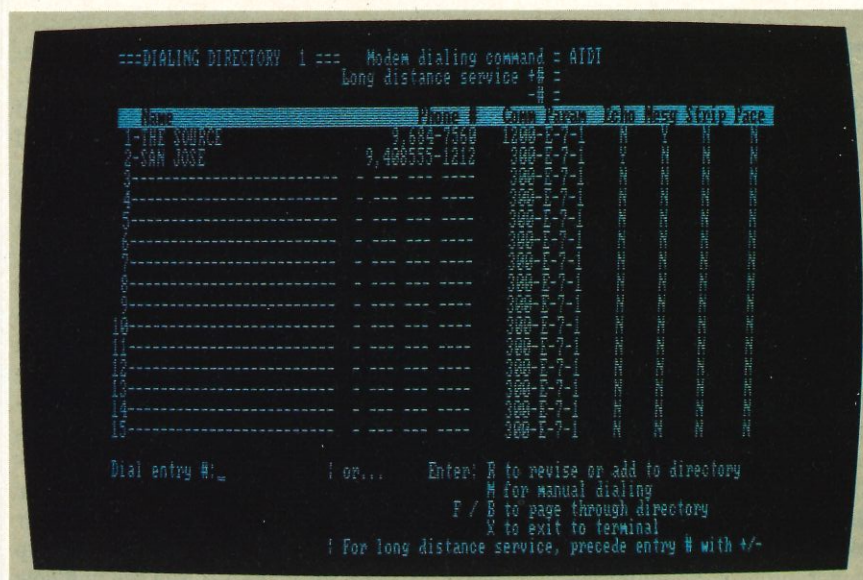
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ing communications. ALT-Y lets you erase a file from the disk and, with a nice safety feature, shows you the first five lines of the file before you kill it. ALT-X lets you exit from the program, but only after it asks you whether you're sure this is what you want to do.

And with ALT-K you can save up to 40 "input strings"—for instance, your CompuServe number and password—that the program will automatically spit out for you when you hit a function key. To use those programmed keys effectively, you need to know exactly what the host computer requires. For instance, to sign onto CompuServe through some access numbers, you need to type two Returns, then CIS and Return, then your membership number and Return, then your password and Return. (When creating one of these programmable keys, you do not use the Return key to program in Returns; instead, you tell the computer to use Returns by typing a curly bracket—}—or any other character you choose.) You could have the programmed key do something fancy and convenient—for instance, sign you onto CompuServe and go straight to the IBM Personal Computer user's group and call up the most recent message on the system—but if you miss so much as one Return, it will take you on a detour. Become very familiar with the services you're using before you try this feature.

PC-Talk's manual says that you don't need to know communications technology or its jargon to use the program. True. But a brief explanation would be helpful, because you can—and often must—change such things as the baud rate, the bits and the parity to communicate with other computers.

You change these things on PC-Talk in one of three ways. Hitting ALT-F lets you change all the program defaults—not only the transmission speed (or "baud rate") but also the default disk drive, the printer port, the working of the "connect" message and more. ALT-P lets you change the basic parameters (baud rate, bits, parity) while you're communicating. And ALT-D brings up that list of 60 phone numbers (the dialing directory) and you can set up different parameters for each phone number.

Dialing directory (top) holds 60 phone numbers. Parameters can be changed during transmission.

You can have CompuServe listed twice—once for the 300 baud transmission rate and again for the faster but more expensive 1200-baud rate. Here, you can program in the basic "attention" code for your modem, if you have an intelligent one and even your access number and code for such discount phone services as MCI and Sprint. To change or add an individual listing you type "R" for "revise" then the number of the listing you want to change. It asks you for a name and then a phone number. Then it asks you questions. These are the choices—I'll translate and explain:

BAUD RATE: Baud is simply "bits per second." It usually takes a total of 10 bits to send one character, seven or eight for the character itself; plus message bits. So 300 baud is 30 characters per second, 1200 baud is 120 per second. The usual rate is 300 and that's as fast as you can communicate safely with an acoustic modem. If you want to communicate at the faster speed, you have to have a 1200-baud modem and so must the computer on the other end. If you give the program an incorrect baud rate—or a typo in any other of the choices—it won't let you dial the number.

BITS: Most communication is done with seven bits, enough to handle the 128 characters in the standard ASCII computer alphabet. If you're simply sending and receiving text with CompuServe, for instance, seven bits will do the job. But if you want to send a program or a file with a lot of extras you want kept intact—such as a WordStar file with commands for boldface and underlining—you need eight-bit. And if you're using the XModem error-checking protocol described below, you'll also need eight-bit.

PARITY: Don't lose any sleep over this one. Simply put, one of those 10 bits per character can be a parity bit, a crude bit of error-checking. Some systems will check to see whether these are "even" or "odd" or other choices. Most times, you need not worry about this at all. But if the operator of a computer with which you plan to communicate tells you to set the parity, just make sure that you're both using the same thing. If you have a chance, ask. If you're using eight-bit communications, parity is always off which you do by setting "n" for "no."

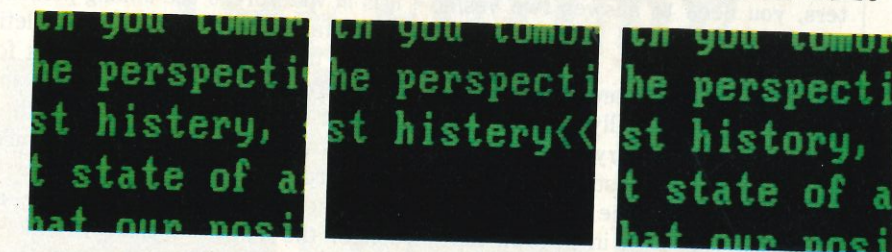
STOP BIT: Almost always set at one. Don't change this unless the operator of the other computer tells you to.

ECHO—HALF- AND FULL-DUPLEX: If the computer at the other end is operating at full-duplex, it is "echoing" back every character you type to your computer so you can see it on your screen. If the other computer is operating at half-duplex, it won't echo back, which means that you won't see what you type. If you aren't seeing what you type, then turn PC-Talk's echo on by answering yes to the question in the dialing directory or by hitting ALT-E while you're communicating. If, on the other hand, you start seeing double—everything you type comes onto the screen twice—then you should turn PC-Talk's echo off. This is usually harmless and you can experiment with both to see whether echo should be on or off. The important lesson here is that if you see nothing happening on your screen after you've dialed another computer, don't panic and presume that your computer or modem or program is broken. Try turning echo on.

MESSAGES: A simple PC-Talk feature that allows the program to send messages such as "ready to receive" to the other computer. You'd never use this when communicating with a big mainframe system like CompuServe. But if you're "talking" with another Personal Computer user, it could be handy to have your Personal Computer tell the other Personal Computer that you are ready to receive a file.

STRIPPING: This allows you to translate or swap one character for another or to erase a character in every file you receive from a system. A simple, if useless, example: You could change every "X" to a "Z." To do this in PC-Talk, you give the program—when it asks—the ASCII code for each character, separated by slashes. (You can find a chart of ASCII translations in most computer and modem manuals.) In this case, you'd change every "X" to a "Z" by typing "088/090." Or if you want to erase every "X" you'd type "088/000." You might use this feature to get rid of carriage returns or line feeds for your printer. Chances are, you

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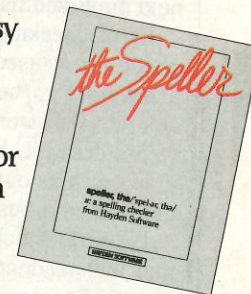
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won't use this much. But if you do, make sure to read the manual first.

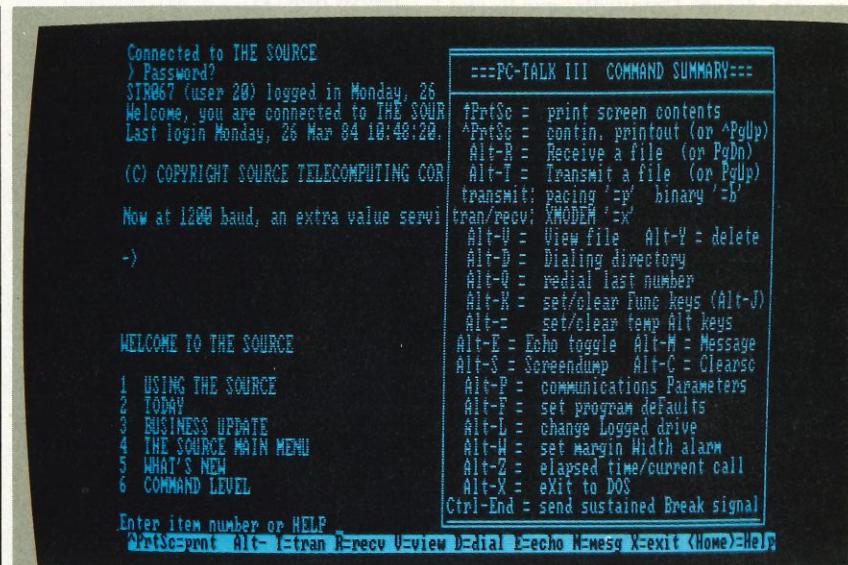
PACING: It may make you proud to know that your tortoise of a Personal Computer can outrun many hares, many large mainframe computers. If yours goes too fast for the big machine it may mean that you will lose some of the data you're transmitting. You can pace it, one line at a time. If you're sending electronic mail through The Source you can have your Personal Computer send a line at a time, delaying a few seconds in between each. You determine how many seconds to delay, usually two or three, according to the PC-Talk manual. Or you can have your Personal Computer wait until the other computer sends a "ready" message before it sends the next line. You will not use this often, but it may come in very handy.

The PC-Talk dialing directory comes with the standard set-up for each phone number: 300-baud, seven-bit, even parity, one stop-bit, no echo, no messages, no stripping and no pacing. This will work fine for most communication, but the program does make it easy to change these things. The only nuisance is that you have to read the screen carefully. When it asks you whether you want to change the stripping you may go ahead and start entering the ASCII codes. But the computer will beep. Before you can enter those characters, you need to answer two yes/no questions.

You haven't ruined the program if you accidentally mess up the dialing directory, the programmable keys or the system parameters. Each of these three items will be stored on your disk in its own file—PC-Talk.KEY for the programmable keys, PC-Talk.DIR for the dialing directory and PC-Talk.DEF for the defaults. You can erase any of those files from the disk. It will create fresh files the next time you use the program.

Error-checking is a luxury. If a bad phone line causes so much as one bit of a program to be garbled in transmission, it won't work—and it's impossible to proofread it. You can look like a fool if so much as one number is garbled or dropped in a business report.

Like too much else in this fledgling and independent industry, there is no standard in error-checking. If you are



PC-Talk will connect with The Source and other information utilities.

using Hayes Smartcom II you have error-checking available—only if the computer you're communicating with also uses Hayes Smartcom II. CompuServe's VIDTEX program offers error-checking—only if you're communicating with CompuServe. Hayes' error-checking and VIDTEX's error-checking will not work together.

The closest thing to a standard is an error-checking protocol called XModem, devised by Ward Christensen. It is a nonproprietary protocol in the public domain, which means that it's free. And it is in widespread use among personal computers. Most of the IBM bulletin boards use XModem and require it for transferring program files. That's important because there are a wealth of good programs available on these bulletin boards for no more than the price of a phone call. These boards are no longer the domain of hobbyists alone. The average business Personal Computer user can find them valuable for getting advice and programs—anything from tips on such popular programs as Lotus 1-2-3 to "utilities" that will have your Personal Computer tell you on the screen whether caps lock or num lock are on.

XModem sends files in 128-character chunks. At the beginning of each chunk is a start-of-file message; at the end is, to put it simply, the sum of all the values of all the bits in the chunk, known as the "checksum"—if both computers do not agree on that sum, then they will keep trying to transmit and

receive that chunk until they do, details that need not concern you. The point is: The program will virtually guarantee error-free transfer of files. That is important.

To receive a file with XModem on PC-Talk, when the computer on the other end tells you that it is ready to send, you hit ALT-R for "receive," as you do with any other file. But when you give the name or "specification" of the file, you type "=x" at the end. PC-Talk will tell you that it's ready to receive and it will send a message to the other computer. When the two have shaken hands, the transmission will begin. It's not as much fun to watch as a regular file transfer, which shows you the entire file on your screen as it passes through the phone lines. Instead, with XModem, all you see is "Received block #1—verified." If there is an error, the program will tell you and it will try again until it gets it right. Most bulletin boards will tell you before transmission begins how many sectors will be sent and sometimes even how long the transmission will take. When it is finished, PC-Talk will stop the reception automatically. So after you've hung up the phone, you should have a clean file, ready for use. If it's a program, it should work like a Bic pen—first time every time.

Here's an object lesson in the Catch-22 problems of error checking. It's the story of how I got the program.

With my computer and Hayes Smartmodem, I got the Hayes Smartmodem

II communications software. It does most everything PC-Talk does. But there were two problems with it: (1) The program presumed that I would always work with the modem. I, however, wanted to use the program—with a cable, not a modem—to communicate with my old Osborne I. (2) Hayes did not come with XModem error-checking, which I needed for receiving some programs I had gotten from IBM-PC bulletin boards. PC-Talk, I learned, would do the trick on both counts. But I did not have time to send disks off to the author and wait for them to return; I needed to transfer some files from my Osborne to my Compaq immediately. I found that PC-Talk was available on some bulletin boards, free for the taking, no waiting.

I was able to use the Hayes software to receive one version of PC-Talk from a bulletin board in Connecticut. There are two versions. One is a program written in BASIC, the "source code"; it operates like any other BASIC program: You load BASIC, then load PC-Talk.BAS, then run it. This version is meant for computers with 64k memory. It does the job, but through BASIC, it operates slowly. At 1200 baud, the computer's memory can overflow before the program can catch up. The second version is compiled (an executable version called PC-Talk.EXE that will run from MS-DOS without loading BASIC); it is meant for machines with 128k of memory or more. It operates much faster. If you own a BASIC compiler, you can compile the .BAS version into .EXE version yourself. I don't own a compiler. But the .EXE version was available on that same Connecticut bulletin board. I tried to "download" that version to my machine. There were catches: The bulletin board would send this complex program only using XModem eight-bit error-checking. Now that I had the BASIC version of PC-Talk, I had XModem. I thought I could do it. But there was another catch. The bulletin board allowed you to stay on for only 60 minutes. Using 300 baud—the fastest rate my BASIC version of PC-Talk could handle safely—receiving the .EXE version of the program would take more than an hour. So I needed the faster version of PC-Talk. Catch-22. I tried to push the BASIC version to communicate at 1200 baud. It over-

flowed again and again. But finally, it worked.

When you get PC-Talk directly from the author (the address appears at the end of this report), you receive a number of files: PC-Talk.BAS, the BASIC version for 64k machines; PC-Talk.EXE, the compiled version for machines with at least 128k; the 70-page manual called PC-Talk.DOC (which includes very clear instructions for making a backup copy on a disk that will include BASIC) plus a file that helps in printing it out, PRINTDOC.BAT; and two "batch" files that let you start the program from the MS-DOS prompt by simply typing the commands TALK64 or TALK128. (The batch files are really very simple. TALK128.BAT simply says "PC-TALK;" it executes the fast .EXE version of the program. TALK64.BAT says "BASIC PC-TALK/C:1024;" it loads BASIC and PC-Talk.BAS and sets the communications buffer at 1024 characters.)

After you have played with your new toy a bit, it is wise to print out the manual. It is clear and concise; it does not

use jargon but explains the finer points of communications technology when necessary. It answered every question I had except one: I could not find a way to "hang up" the phone when using a direct-connect intelligent modem like the Hayes Smartmodem. There is no command for that in the program.

The author includes one more file on the disks he sends out, COPY-TALK.BAT, which helps you make copies of the program for friends. No need to feel guilty, like a pirate on the high seas of software. He encourages you to send it around, to spread the wealth. The only condition is that you not charge anything for it and that you not erase the address and the request for \$35.

To get the program, send two blank disks (one for the program, one for the manual) and a self-addressed, stamped return mailer to The Headlands Press, Inc., P.O. Box 862, Tiburon, CA 94920.

—Jeff Jarvis

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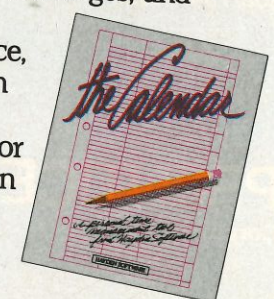
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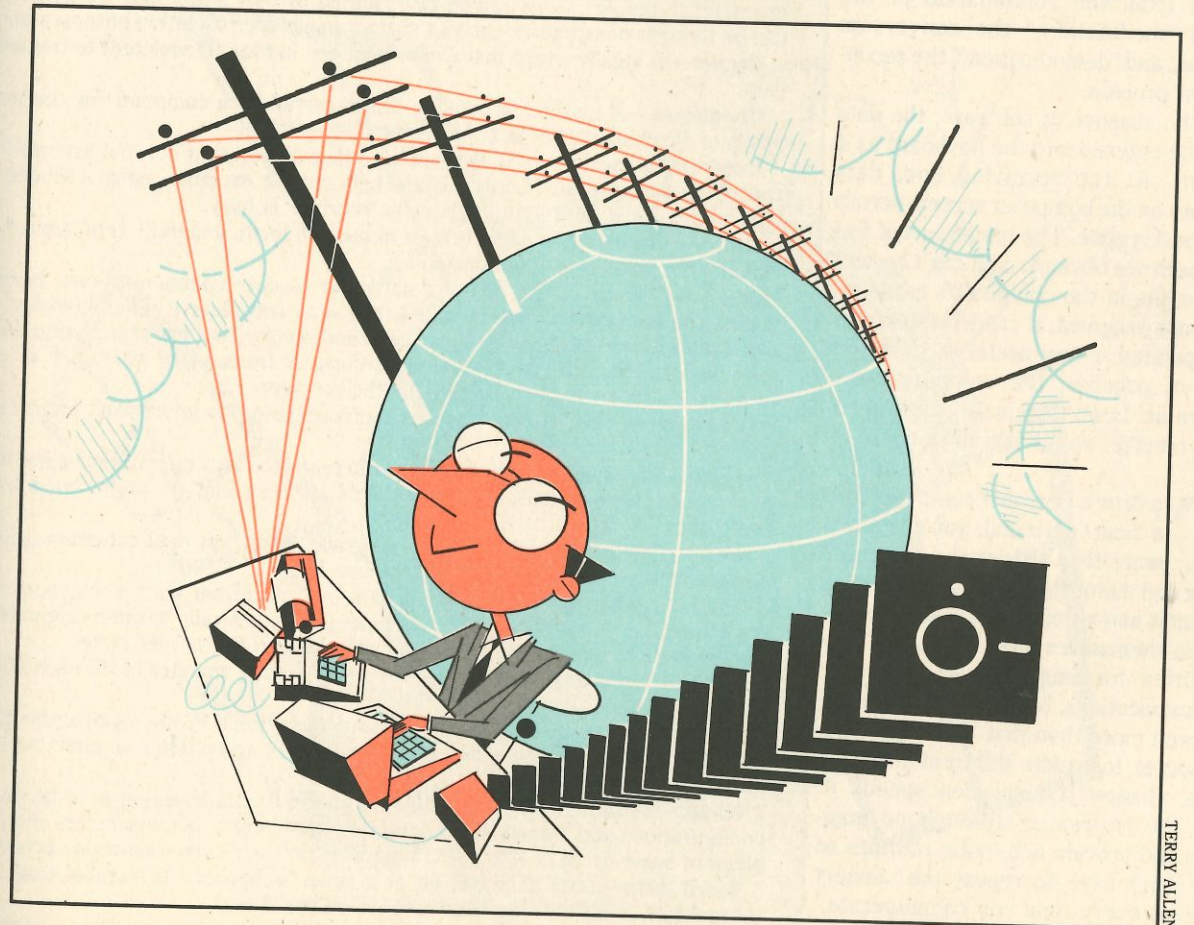
1. Plug the transformer into a power source.
 2. Plug the transformer into the modem.
 3. Switch on the modem.
 4. Determine whether your computer is a DTE or DCE. (Check the manual if in doubt.)
 5. Carefully open the case of your modem.
- CAUTION: MAKE SURE THE POWER IS OFF BEFORE OPENING THE CASE.
6. Set the eight binary switches (consult your manual for details).
 7. Carefully close the case.
 8. Plug the telephone line into the modem.
 9. Plug the modem into the computer.
 10. Turn on the computer.

NOTE: IF YOU WANT TO SIMULATE VOICE DATA SWITCHING GO BUY ANOTHER ADAPTOR.

BUYER'S GUIDE

A Buyer's Guide To Communications Software

This is a guide with all the facts and information you need to purchase communications software. There are many packages that do many things and throughout this guide the functions are explained to help you decide what you need. A glossary of the terms is included to help guide you.



TERRY ALLEN

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JUNE 1984

If you're thinking of using your computer for communications, you may also be thinking you only need to add a modem and you'll be online with the world. Well, it's not quite as simple as that. Communications, like any other personal computing application, depends on a successful combination of hardware and software. And while some modems come bundled with software, others don't, so it's up to you to find a program that supports the modem you're using and has the features you're likely to need. To do that, you need to know a little about the communications process, and more particularly, the modem's place in that process.

Modems work by taking data from a computer and converting it into a string of audio signals which can be transmitted over telephone lines. The modem connected at the other end of the line reconverts the data into digital form, making it acceptable to the receiving computer. The name modem comes from the combination of the words "modulation," the conversion process, and "demodulation," the reversion process.

In the absence of software, the data must be entered into the keyboard as it is sent. At the receiving end, data appears on the computer screen, scrolls past, and is gone. The limitations of this approach are obvious: data can't be sent from a file in the computer's memory, and once received, it can't be stored or manipulated in any useful way. In this kind of process, the computers are known as dumb terminals—they send, they receive, and that's all they do.

To turn a personal computer into a smart terminal, you need software that will let the computer store and manipulate the data as well as transmit and receive it. Those capabilities in themselves open up a lot of possibilities for computer-to-computer communications, but good software can do even more than that. It can set up a computer to handle different forms of data, change transmission speeds to suit the hardware, store phone numbers and provide automatic routines so you don't have to repeat the connect process every time you communicate.

Of course, not all packages perform all functions. Even if they did, you might not need every feature, and it

A COMMUNICATIONS GLOSSARY

ASCII Code—American Standard Code for Information Interchange. A seven-bit code used widely in data communications to transmit the letters of the alphabet, plus the standard punctuation marks and certain control characters.

Acoustic coupler—A device that allows modem-generated audio signals to be transmitted into and received from a telephone handset. The handset is placed into rubber cups on top of the coupler. A small transducer at the bottom of the cups produces the actual signal.

Auto-answer modem—A modem that can answer an incoming call by generating a carrier tone that signals the originating modem its call has been received.

Auto-dial modem—A modem that can simulate a telephone dialer using either pulse or touch-tone dialing signals.

Baud—A unit of signaling speed, usually given as "baud rate." For most personal computer communications applications, baud rates of either 300 or 1200, which approximate 10 and 40 characters per second, respectively, are used.

Binary Number—Any number in a "base two" system, where the digits have the value of 1 or 0.

Bit—Short for binary digit (either 1 or 0), the elemental unit of digital information.

Buffer—Often called capture buffer. In general, a temporary storage place for data. A capture buffer is temporary storage for data "captured" from a communications link.

Byte—A unit of eight bits. Characters are often referred to as bytes, but each character in the ASCII set can be represented by only seven bits. Thus, a byte can be thought of as equivalent to a character for approximation purposes only.

Carrier—A steady signal that can be changed in tone (modulated) to transmit data.

Checksum—A method of totaling bits received by a computer for the purposes of checking errors in transmission.

Control Characters—ASCII characters that do not print out, but are used to control communications. Control characters can, for example, signal a sender to stop transmitting information when the receiver is busy.

Data—Information in code, text or numerical form, generally represented in ASCII code for digital communications.

Duplex—Refers to the two-way nature of modem communications. In full-duplex communication, both terminals can send and receive simultaneously. In half-duplex operation, both ends can send and receive, but not at the same time. With full-duplex, echo-back communications, a transmitted character is not displayed until it has been verified by the receiver.

Frequency—The number of cycles of an oscillating waveform that occur each second.

Modem—A device that modulates audio tones to carry digital signals and also demodulates the signals at the receiver so they can be understood by a computer.

Noise—Random disturbances that degrade or disrupt data communications, present to some degree in all transmission links.

Originate/Answer Modem—A modem that can either start a telephone call or receive one automatically. Some modems automatically assume originate or answer status, others require manual switching to the proper state.

Parity—A means of checking for errors by adding an extra bit to each ASCII character transmitted.

Protocol—A set of rules for the transmission of data. Protocols describe when transmission will start and stop, what error checking system is in effect and the like.

RS-232—A standard for transmission of serial data covering both hardware configurations and transmission parameters. Different manufacturers may implement some or all of the RS-232 standard in their communications products.

Serial data—Data sent one bit at a time, as opposed to parallel data sent several bits at a time. Modems operate on serial data.

Terminal—A device that receives or transmits digital information. Communications software is designed to control computers during terminal mode operation.

makes no sense to pay for capabilities you won't use. There are other considerations as well—you need a package that will support your computer, and more important, your modem. And you need one you can afford. As with any software, there's a lot to choose from. So what should you look for?

At its simplest, communications software should be able to transmit and receive data represented by standard ASCII code characters. ASCII, which stands for American Standard Code for Information Interchange, is a seven-bit code that represents all the letters in the alphabet, both upper and lower case, punctuation marks, and some control codes. Files represented in this code are often called simply "text files." Most information utilities, like The Source, Dow Jones and CompuServe, send their data to their subscribers in ASCII code. Personal computers can store their data in ASCII code, too. So

Error checking in a software package can flag most accuracy problems before you start transmitting data.

communications software should be able to understand it. It should also be able to save data to, and transmit data from, an external storage device (disk drive, cassette tape etc.), and it should provide a screen display of the data that's going out or coming in.

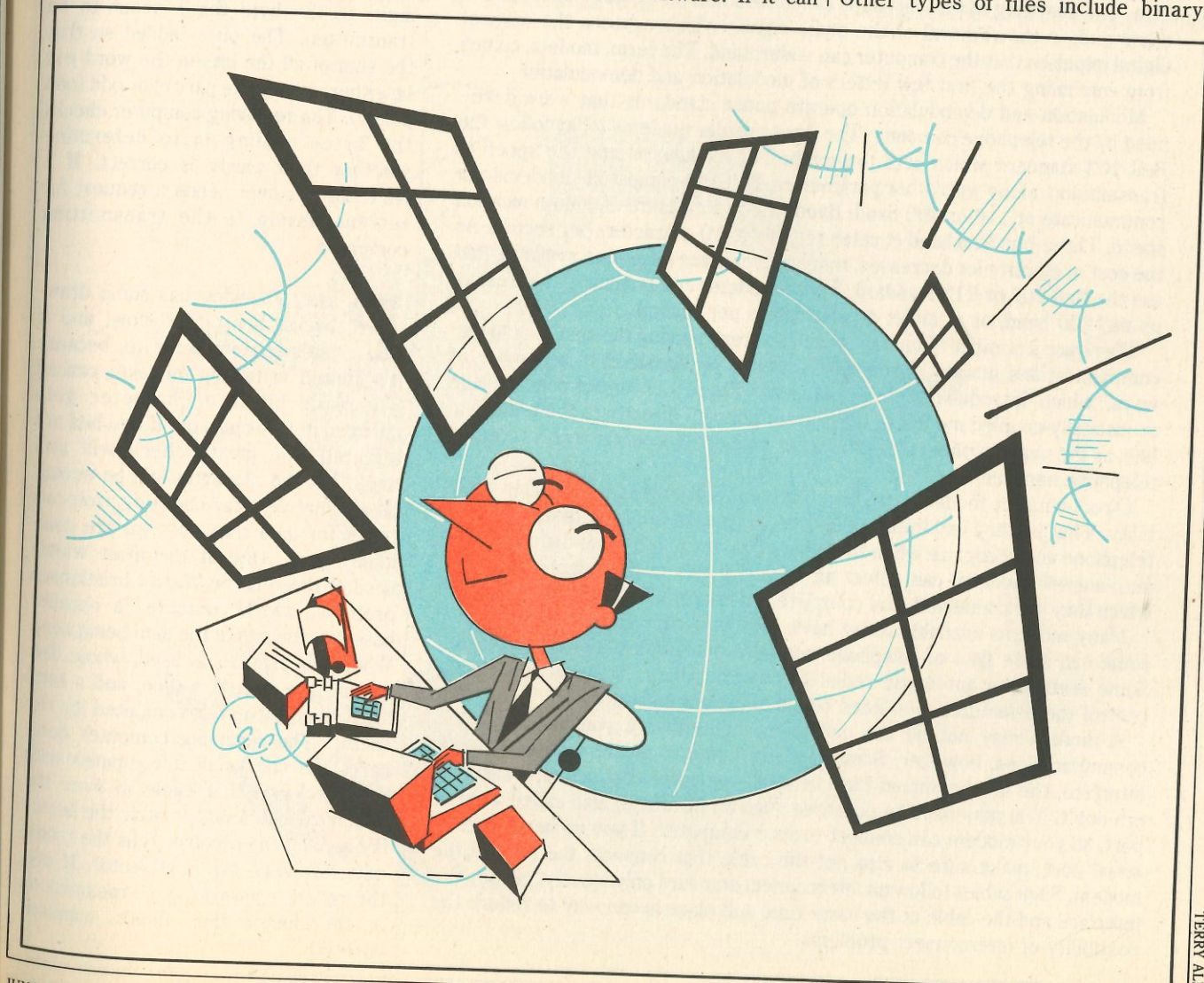
A communications package should also be able to control the operation of the modem. For example, if the modem has an auto-dial feature, it should be activated from the software. If it can

transfer at different speeds, then the software should be able to make the changes as needed.

Another feature of some modems is the provision for both full- and half-duplex transmission. In full-duplex communications, both the receiving and the transmitting computer can send and receive at the same time. In half-duplex mode, both ends can send and receive, but not at the same time. If the modem has the ability to switch between full- and half-duplex modes, the communications package you choose should be able to make the switch.

That's a basic shopping list for communications packages, and most of the software available will meet these requirements. But most of them will also do more.

One of the most valuable additional features is the capability to transfer data which is not in ASCII, or text form. Other types of files include binary,



TERRY ALLEN

ANATOMY OF A MODEM

Throughout the communications software buyer's guide, constant reference has been made to the modem. This has made it clear that a modem is an essential piece of equipment; here's what a modem is, and what it does, in more technical terms.

The plain and simple fact is that unless you're a Ham radio operator or will spend many thousands of dollars for data communications, you're going to communicate over the in-place telephone network. A modem must then provide the connection to that network.

While you can transmit computer-compatible signals over wires, over long distances it gets very expensive. So most personal computer communications take place over the phone voice network. Computer-compatible signals are not voice signals, so must be converted for transmission.

A modem accomplishes the conversion by taking the computer's output, in the form of electrical impulses that represent ones and zeros, or "ons and offs," and changing them into audio signals that can be transmitted over voice lines. At the other end of the connection, another modem reads the tones from the telephone line and converts them back into binary signals.

In actual practice, a continuous audio signal, called a carrier, is changed abruptly in pitch, so that the changes represent the presence or absence of data. The changing of this carrier is called modulation. Demodulation, at the other end, is the removal of the audio signal, which exposes the original digital impulses that the computer can understand. The term, modem, comes from combining the first few letters of modulation and demodulation.

Modulation and demodulation operate under standards that were developed by the telephone company. The most popular modems today follow the Bell 103 standard which sets the method of modulation and the speed of transmission, along with other parameters. Bell 103-compatible modems can communicate at 110 or 300 baud. Baud rate is a measure of communication speed: Three-hundred baud equates roughly to 10 characters per second. As the cost of electronics decreases, more modems are becoming available that use the Bell 202 or 212 standard. These modems communicate at speeds of up to 1200 baud, or at about 40 characters per second.

There are a number of modem manufacturers serving the small-computer communications market. Their products can be classified in a number of ways, which introduces some confusion. There are direct-connect and acoustically-coupled modems. The former connect directly to the telephone line, as the name implies, while the latter connect by contact with a standard telephone handset.

Direct-connect modems can have automatic dialing and answering capability. That is, they can initiate the tones or pulses required to dial another telephone and recognize when that phone has answered (auto-dial modems); auto-answer modems can detect an incoming call on the telephone line to which they are connected, and complete the telephone circuit automatically.

Many modems available today have additional capabilities. For example, some can store lists of telephone numbers or complex log-on sequences. Some feature an automatic redial of busy numbers. To most effectively control these features, you need communications software.

A modem may not be the only piece of hardware you need for data communications, however. Some modems come complete with an RS-232 interface, the most common form of small-computer connection, while others don't. You may need to purchase such an interface, also called a serial port, so your modem can connect to your computer. If you do need to get a serial port, make sure to also get the cable that connects the port to the modem. Such cables follow an interconnect standard only loosely; getting the interface and the cable at the same time and place is one way to reduce the possibility of interconnect problems.

which is used by many word processors, and files written in programming language. The ability of the software to transmit and receive these kinds of files saves you the work of converting them into text files.

Another capability which can save you time and frustration is error checking. Transmission of data can be affected by noise on the telephone line, atmospheric conditions, and other types of interference. Weather disturbances can garble the data, resulting in unintelligible files filled with random characters. When this happens, it can be very difficult, and sometimes impossible to correct the files and put them into a form you can use. An error checking feature in a communications software package will check the accuracy and flag problems before transmitting the data.

The simplest method of checking for errors is by adding a parity bit (binary digit) to the byte that's about to be transmitted. The bit is added so that the sum of all the bits in the word will be either even (even parity) or odd (odd parity). The receiving computer checks the bytes coming in to determine whether their parity is correct. If it isn't, the receiver sends a request for retransmission to the transmitting computer.

Parity checking has some drawbacks. It's rather slow, and it isn't terribly accurate, because it's limited to finding mistakes caused when one bit in a character gets changed in transmission. If two bits are affected, the parity check will still work, but the character will be wrong. So alternative error checking protocols (rules for data transmission) are commonly used. One of the most widely used of these is the Ward Christiansen protocol, which computes a number based on the bits in the data being sent. When this protocol is used, whole disk sectors are sent at a time, and a total sum, or checksum, is computed for the sector. The receiving computer compares the checksum it computes with the checksum that came in over the line. If the checksums match, the sector is fine, and the receiver tells the transmitter to send the next sector. If not, the receiver asks for a retransmission of the sector that didn't transmit correctly.

If you want to transfer large files, you really should know how big the program's capture buffer is.

It's important to remember that the computer you're communicating with has to be running a program with the same error checking protocols as the one you're using, otherwise, the error checking won't work.

There's one basic question you should ask yourself beyond whether a program has or doesn't have certain capabilities. You really should know how big the program's capture buffer is. If you want to transfer large files from one computer to another, the communications program you use has to have a large amount of memory set aside as a capture buffer. If the file is larger than the buffer, data can be lost in transmission.

Actually, this problem can occur even before you try to transmit data. If, for example, your word processor's buffer is larger than the one on your communications program, you'll have to limit the size of the file you want to

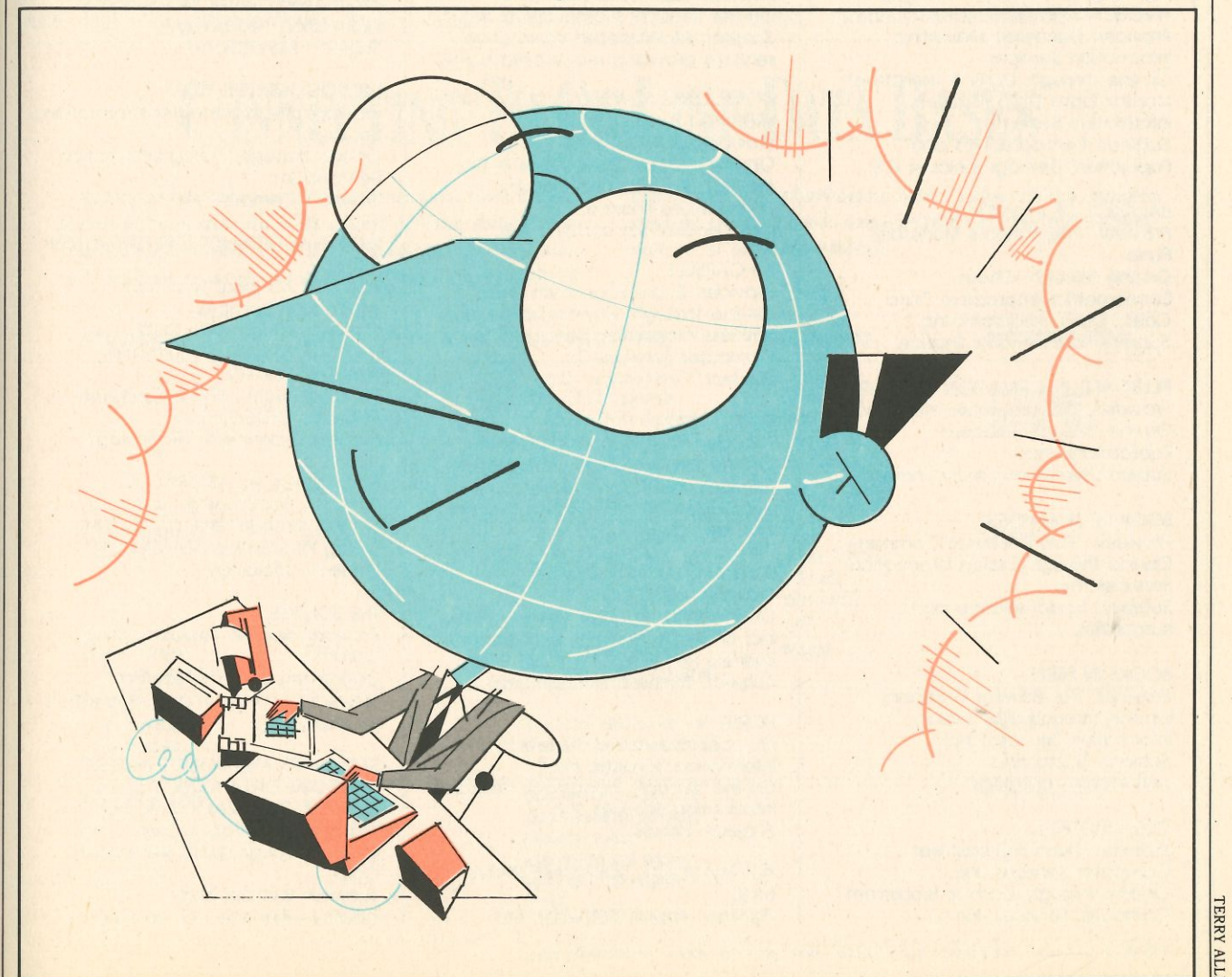
send, or send the file directly from the word processor to the modem. Not all programs will do this.

Some programs get around this problem by including a feature called auto buffer save. When the buffer is full, the program will automatically issue a stop character to the transmitter and save the full buffer. Then it will continue to receive data. This is a valuable feature if you're planning to work with large files.

Any communications program that incorporates the elements outlined thus far—storing received files on disk, transmitting a file from disk, controlling a modem, checking for errors in transmission, and automatically saving the buffer when it's full, will probably meet most of your communications needs. But there are some features which, while not essential, are convenient.

Some programs will store log-on routines (the sequence of characters that opens the communications line between two computers) and activate them automatically. Automatic log-on saves a lot of time for people who call several numbers, because each log-on sequence is different.

Another convenient extra is the ability to edit files while still in the communications program. This allows you to make changes to the file before and after transmission, without downloading to a word processing program.



A LISTING OF SOME ON-LINE DATA BASES

ACCOUNTANTS' INDEX
 Provider: American Institute of Certified Public Accountants
 On-line through: SDC Search Service
 Subject: Accounting

ADTRACK
 Provider: Corporate Intelligence, Inc.
 On-line through: Dialog International
 Subject: Advertising

AGRICOLA
 Provider: U.S. Department of Agriculture
 On-line through: BRS, Dialog Information Services, Inc.
 Subject: Literature on agriculture

AGRICULTURE BANK
 Provider: Data Resources, Inc.
 On-line through: Data Resources, Inc.
 Subject: Agricultural economic data

AMERICAN PROFILES
 Provider: Donnelley Marketing Information Services
 On-line through: Dunn & Bradstreet, Control Data Corp./Business Information Systems
 Subject: Demographics and Population, Demographics in U.S.

BALANCE OF PAYMENTS
 Provider: International Monetary Fund
 On-line through: Chase Econometrics/Interactive Data Corp.; Data Resources, Inc.
 Subject: International finance

BILLBOARD INFORMATION NETWORK
 Provider: Billboard Publications, Inc.
 On-line through: Billboard Publications, Inc.
 Subject: Music and music industry

BOOK REVIEW INDEX
 Provider: Gale Research Company
 On-line through: Dialog Information Services, Inc.
 Subject: Social science and humanities

BOOKS IN PRINT
 Provider: R.R. Bowker Company
 On-line through: BRS, Dialog Information Services, Inc.
 Subject: Books and periodicals—catalogs

CSS/QUOTES+
 Provider: Dunn & Bradstreet Computer Services, Inc.
 On-line through: Dunn & Bradstreet Computer Services, Inc.

Subject: Securities-Canada, Securities-U.S.

COMMODITIES FUTURES
 Provider: Market Data Systems, Inc.
 On-line through: General Electric Information Services Co.
 Subject: Commodities U.S.

COMMODITIES/FUTURES
 Provider: Call Computer, Inc.
 On-line through: Call Computer, Inc.
 Subject: Commodities U.S.

COMPUSERVE CONSUMER INFORMATION SERVICES
 Provider: CompuServe, Inc.
 On-line through: CompuServe, Inc.
 Subject: Multifaceted information services providing many data bases

COMPUSERVE EXECUTIVE INFORMATION SERVICES
 Provider: CompuServe, Inc.
 On-line through: CompuServe, Inc.
 Subject: Multifaceted information services providing many data bases

DOW JONES NEWS AND DOW JONES FREE-TEXT
 Provider: Dow Jones & Co.
 On-line through: Dow Jones & Co.
 Subject: Business and industry corporations-finance, news-economics and finance

EI CAPSULE
 Provider: Evans Economics, Inc.
 On-line through: Control Data Corp./Business Information Services/Boeing Computer Services Co.
 Subject: Economics—U.S.

FOUNDATIONS
 Provider: The Foundation Center
 On-line through: Dialog Information Services, Inc.
 Subject: Directory, funding sources and awards

HARVARD BUSINESS REVIEW
 Provider: HBR/ONLINE
 On-line through: John Wiley & Sons, Inc. under agreement with Harvard Business Review
 Subject: Business management

HORSE
 Provider: Bloodstock Research Information Services, Inc.
 On-line through: Bloodstock Research Information Services, Inc.
 Subject: Horses

INTERNATIONAL SOFTWARE DATA BASE
 Provider: Imprint Software, Ltd.

On-line through: Dialog Information Services, Inc.
 Subject: Computers and computer industry

LEGAL RESOURCE INDEX
 Provider: Information Access Corp.
 On-line through: Dialog Information Services, Inc.
 Subject: Law

LEGI-SLATE
 Provider: Legi-Slate, Inc.
 On-line through: Legi-Slate, Inc.
 Subject: Government, U.S.-Federal, U.S.-State

MEDLINE
 Provider: Australian Medline Network; BLAISE-LINK; DRS; Dialog Information On-line through: Services, Inc.; DATA-STAR; DIMDI; MIC-KIBIC; National Library of Medicine Japan Information Center of Science & Information Technology
 Subject: Biomedicine

MICROCOMPUTER INDEX
 Provider: Microcomputer Information Services
 On-line through: Dialog Information Services, Inc.
 Subject: Computers

NATIONAL TECHNICAL INFORMATION SERVICE
 Provider: National Technical Information Services
 On-line through: BRS; CISTI; DATA-STAR; Dialog Information Services; ESA-IRS; INKA Karlsruhe; SDC Information Services; CEDOCAR
 Subject: Science & Technology

SOCIOLOGICAL ABSTRACTS
 Provider: Sociological Abstracts, Inc.
 On-line through: BRS; DATA-STAR; Dialog Information Services, Inc.
 Subject: Sociology

THE SOURCE
 Provider: Source Telecomputing Corp.
 On-line through: The Source
 Subject: Contains many information services

STANDARD AND POOR'S INDUSTRY FINANCIAL DATA BANK
 Provider: Data Resources, Inc.; Standard and Poor's Corp.
 On-line through: Data Resources Corp.
 Subject: Business and industry—Finance, U.S. finance

Functions added to communications programs can make them hard to use—try them before you buy.

While all these features can be useful, they're not essential, and so we haven't included them in the comparison charts of communications software that start on page 130. If you want these extras, make sure to ask about them before you shell out for a communications program. You should be aware, though, that the more features a program has, the more expensive it's likely to be. And adding features adds complexity, so multifeatured programs tend to be more difficult to use than those with more limited capabilities. Some software publishers attempt to get around this problem by making their programs completely menu-driven, which is nice, but too many menus can spoil easy interaction with a program.

The only real way to know whether a program will suit you is to try it out. This sounds easier than it is, because it's entirely possible that your computer dealer, or software dealer, won't

have a modem-equipped computer on which you can try the software. But you should be able to go through some simple configuration steps, move into terminal mode, which will probably get you a message telling you to establish a phone connection, and so forth. Do enough to get an idea of how this program works, and what it can do.

So far this has been a discussion of asynchronous communications software. That's the kind of data communications most common with personal

computers, because it's the easiest to implement. Asynchronous communications proceed without sender and receiver being aware of what the other is doing, to some extent. They know they're connected, because each modem sends a carrier signal at an appropriate frequency to inform the other of its existence. But they don't know when the other is going to do something. Their communications are not synchronized.

Synchronous communications, on the other hand, proceed with sender and receiver locked in step with one another. Since sender and receiver know what each other is doing, their communications can proceed at a much faster rate, because there is less figuring out what's going on in the communications channel. Synchronous communications systems can take advantage of this by allowing more error checking than is possible with asynchronous communications.

CONNECTING TO ON-LINE DATA BASES

Many people who use data communications with a personal computer do so to access on-line data bases. There are a number of these data bases, covering subjects as diverse as stocks and bonds and thoroughbred

bloodlines. The chart below shows subscription charges, storage charges and connect-time charges for a cross-section of on-line services.

SERVICE	SUBSCRIPTION	CONNECT TIME	STORAGE	MONTHLY MIN.
The Source	\$100	\$20.75/hr prime 7.75/hr non—prime 300 baud 1200 baud—\$5/hr surcharge prime, \$3/hr non—prime	\$.50/rec first ten (1 rec = 2k bytes)	\$1 storage \$9 connect
CompuServe	\$39.95	\$6/hr non—prime 12.50/hr prime	First 128k free \$4/wk per add 64k	None
Dow Jones News/Retrieval	\$75	\$1.20/min prime .90/min non—prime	None	
Dialog Information Services	None	Typical searches of the data bases cost \$25 to \$125.		None
BRS After Dark	\$75	\$6/hr—to—\$20/hr depending on info researched. 6 p.m. local time to 4 a.m. Eastern time.		2 hr/month

This listing is based on information from Cuadra Assoc. Inc.'s Directory of On-line Data Bases.

BUYER'S GUIDE

Many mainframe and minicomputers support synchronous communications but not asynchronous communications. This isn't true for all of these large computers. The computers of the public information services, for example, support asynch. That's how the large number of subscribers they have with personal computers are able to communicate with them. But many computers inside corporations are only communicating with terminals and smaller computers synchronously, because such communications are faster, and because they implement more sophisticated error checking and correcting protocols than are possible in the case of asynch.

If you want a communications package that will let you communicate with

other personal computers and with the mainframes that make up the public bulletin boards, then an asynchronous package is for you. If, on the other hand, you need to communicate with the corporate mainframe, assuming the data processing types allow such communications, and that the mainframe only supports synchronous communications, then you'll wind up using one of the latter packages. It isn't likely that you'll be buying such a package yourself—corporate DP types get very parochial about their large computers. Nevertheless, we've included some of the synchronous packages that run on personal computers in our charts for your information.

Such packages normally emulate one of the IBM communications terminals.

The most common of these are the 3270 family of terminals that run a sophisticated communications protocol allowing for high speed and extensive error checking and correcting.

Just getting to a mainframe computer using the proper protocol, which is what synchronous software and hardware terminal emulators are all about, isn't enough. Whether you're talking to a large computer synchronously or not, there's still the problem of transferring a file from the big machine and getting it into some kind of form that a small computer can understand. Spreadsheets, for example, require that the data they use be in a particular format, and data are not normally stored on a mainframe computer in a way that they will load easily into a spreadsheet. With

VisiCalc, for example, each data element needs additional characters tacked onto it that tell the program where the element is to go in the spreadsheet.

Publishers are becoming aware of needs like taking a mainframe file and loading it into a personal computer program, and file-transfer programs to accomplish just this kind of action are starting to appear. The ones we know about are listed in our charts. With these programs, the selection chore is considerably simpler, because the choice is determined by the kind of mainframe computer you are trying to talk to, and the program into which you're trying to load the data. These programs aren't general data communications programs, like most of those

listed in the charts. They are special-purpose programs intended for data-file transfer only.

In the case of the general programs, though, the selection process is pretty clear. Any such program should be able to send and receive ASCII text files, and to store received files on a floppy disk. It should also be able to read a file from disk and send it over the telephone line. Its buffer must be large enough that you can comfortably load the largest file you expect to get, and it should have some provision for automatically saving your capture buffer when it becomes full so data aren't lost.

If you have an auto-dial modem, or an auto-answer modem, or one with switchable baud rates, or one that can operate in half or full duplex, then the

communications software should be able to control the modem's parameters. That means the software has to be compatible not only with your computer, but with your modem as well.

Finally, there are the things that are nice to have in communications software—the ability to automatically log on to time-sharing services, for example, or the ability to edit files prior to transmission or after reception. Remember that the more functions the program has, the more it is likely to cost. And at the same time, adding more functions to a program often reduces its ease of use. So the last thing you need to know about buying communications software is: Try it before you buy it.

—David Gabel

COMMUNICATIONS SOFTWARE PUBLISHERS

ADVANCED MICRO TECHNIQUES
1291 E. Hillsdale Blvd.
Suite 209
Foster City, CA 94404
(415) 349-9336

ALPHA SOFTWARE CONNECTION
30 B St.
Burlington, MA 01803
(617) 229-2924

APPARAT, INC.
4401 S. Tamarac Pkwy.
Denver, CO 80237
(303) 741-1778

APPLE COMPUTER
20525 Mariani Ave.
Cupertino, CA 95014
(408) 996-1010

ARROW MICRO SOFTWARE
11 Kingsford
Kanata, Canada, K2K 1T5
(613) 592-4609

CAWTHON SCIENTIFIC GROUP
24224 Michigan Ave.
Dearborn, MI 48124
(313) 565-4000

COMPUTER APPLICATIONS, INC.
13300 S.W. 108 St. Circle
Miami, FL 33186
(305) 385-4277

CONTEXT MANAGEMENT SYSTEMS
23868 Hawthorne Blvd.
Torrance, CA 90505
(213) 378-8277

CORPORATION FOR DISTRIBUTION SYSTEMS
17440 Dallas N. Pkwy.
Dallas, TX 75252
(214) 380-0671

CYBERAN SOFTWARE, INC.
11222 Richmond
Suite 140
Houston, TX 77082
(713) 558-8090

DATASOFT, INC.
19808 Wordhoff Pl.
Chatsworth, CA 91311
(213) 701-5161

DATAMARK BUSINESS SYSTEM
279 S. McKnight Rd.
St. Paul, MN 55119
(612) 738-9111

DIGITAL MARKETING CORP.
2363 Boulevard Circle
Walnut Creek, CA 94595
(415) 938-2880
(800) 826-2222

DIRECT-AID
P.O. Box 4420
Boulder, CO 80306
(303) 442-8080

DYNAMIC MICROPROCESSOR ASSOCIATES
545 Fifth Ave.
Suite 1103
New York, NY 10017
(212) 687-7115

EBERT PERSONAL COMPUTERS
4122 S. Perker Rd.
Aurora, CO 80014
(303) 693-8400

FEROX MICROSYSTEMS
1701 N. Fort Meyer Dr.
Suite 611
Arlington, VA 22209
(703) 841-0800

FIRST SOFTWARE COMPANY
5622 E. Presidio
Scottsdale, AZ 85254
(602) 953-1208

HAWKEYE GRAFIX
23914 Mobile St.
Canoga Park, CA 91307
(213) 348-7909

HAYES MICROCOMPUTER PRODUCTS, INC.
5923 Peachtree Industrial Blvd.
Norcross, GA 30092
(404) 449-8791

HEWLETT-PACKARD COMPANY
11000 Wolfe Rd.
Cupertino, CA 95014
(800) 367-4772

HOWE SOFTWARE
14 Lexington Rd.
New City, NY 10956
(914) 634-1821

IBM
1000 N.W. 51st St.
Boca Raton, FL 33432
(800) 447-4700

LINDBERGH SYSTEMS
49 Beechmont
Worcester, MA 01609
(617) 852-0233

LIFEBOAT ASSOCIATES
1651 Third Ave.
New York, NY 10028
(212) 860-0300

LINK SYSTEMS
1655 26th St.
Santa Monica, CA 90404
(213) 394-3664

LOVELLS
4205 Biltmore
Corpus Christi, TX 78413
(512) 852-3096

MADISON COMPUTER
1825 Monroe
Madison, WI 53711
(608) 255-5552

MARK OF THE UNICORN, INC.
P.O. Box 423
Arlington, MA 02174
(617) 576-2760

MICROCOM, INC.
1400A Providence Hwy.
Norwood, MA 02062
(617) 762-9310

MICROCOP
913 Walnut St.
Philadelphia, PA 19107
(215) 627-7997

MICRO-SYSTEMS SOFTWARE
4301-18 Oak Circle
Boca Raton, FL 33431
(305) 983-3390

MING-TELECOMPUTING, INC.
P.O. Box 101
Lincoln Center, MA 01773
(617) 259-0391

MYCROFT LABS, INC.
P.O. Box 6045
Tallahassee, FL 32314
(904) 385-1141

MICROLOG
222 Rt. 59
Suffern, NY 10901
(914) 368-0353

PEACHTREE SOFTWARE, INC.
3445 Peachtree Rd. N.E.
8th Floor
Atlanta, GA 30326
(800) 554-8900

PERSOFT, INC.
2740 Ski La.
Madison, WI 53713
(608) 273-6000

RADIO SHACK
1800 One Tandy Center
Fort Worth, TX 76102
(817) 390-3011

SAMS SOFTWARE
4300 W. 62nd St.
Indianapolis, IN 46268
(317) 298-5400

SANYO BUSINESS SYSTEMS CORP.
51 Joseph St.
Moonachie, NJ 07074
(201) 440-9300
(800) 526-7043

SHARED SYSTEMS TECHNOLOGIES, INC.
Route 7 South
Box 163
Bennington, VT 05201
(802) 442-8008

SMALL BUSINESS SYSTEMS GROUP
6 Carlisle Rd.
Westford, MA 01886
(617) 692-3800

SOFTWARE CONNECTIONS
2041 Mission College Blvd.
Santa Clara, CA 95054
(408) 988-0300

SOFTWARE SORCERY, INC.
7927 Jones Branch Dr.
Suite 400
McLean, VA 22102
(703) 471-0610

SOLUTION SOFTWARE SYSTEMS
3930 Wispering Trail
Hoffman Estates, IL 60195
(312) 259-4800

SOUTHEASTERN SOFTWARE
6414 Derbyshire Dr.
New Orleans, LA 70126
(504) 246-8438

SUPERSOFT TECHNOLOGY
P.O. Box 1628
Champaign, IL 61820
(217) 359-2691

SYSTEMS & SOFTWARE, INC.
1315 Butterfield Rd.
Suite 230
Downers Grove, IL 60515
(312) 960-1181

TELEPHONE SOFTWARE CONNECTION, INC.
P.O. Box 6548
Torrance, CA 90504
(213) 516-9430

TELEVIDEO SYSTEMS, INC.
P.O. Box 3568
Sunnyvale, CA 94088
(408) 745-7760

TELEXPRESS, INC.
P.O. Box 217
Willingboro, NJ 08046
(609) 877-4900

THE MICROPERIPHERAL CORP.
2565 152nd Ave. N.E.
Redmond, WA 98052
(206) 881-7544

THE MICROSTUF COMPANY
P.O. Box 33337
Decatur, GA 30033
(404) 491-3787

TNW CORP.
3444 Hancock St.
San Diego, CA 92110
(619) 296-2115

TRANSEND CORPORATION
2190 Paragon Dr.
San Jose, CA 95131
(408) 946-7400

UNIQUE AUTOMATION PRODUCTS
15401 Redhill Ave.
Suite G
Tustin, CA 92680
(714) 730-1012

UNITED SOFTWARE INDUSTRIES
1880 Century Park East
Suite 311
Los Angeles, CA 90067
(213) 556-2211

U.S. ROBOTICS
1123 W. Washington
Chicago, IL 60607
(312) 733-0497

VECTOR GRAPHIC
500 N. Ventu Park Rd.
Thousand Oaks, CA 91320
(805) 499-5831

VEN-TEL, INC.
2342 Walsh Ave.
Santa Clara, CA 95051
(408) 727-5721

VISICORP
2895 Zanker Rd.
San Jose, CA 95134
(408) 946-9000

VOLKSMICRO COMPUTER SYSTEMS, INC.
202 Packets Court
Suite C
Williamsburg, VA 23185
(804) 220-0005

WESTICO
25 Van Zant St.
Norwalk, CT 06855
(203) 853-6880

WINDMILL SOFTWARE, INC.
Box 1008
Burlington, Ontario,
Canada L7P 3S9
(416) 336-3353

WOOLF SOFTWARE SYSTEMS
6734 Eton Ave.
Canoga Park, CA 91303
(213) 703-8112

BUYER'S GUIDE

Package /Company	Systems	Price	Asynch?	Verified Data Transfer?	Baud Rate	Modems Supported	File Type
ACCESS III Apple Computer	APL III, III+	\$150	Y	N	110-9600	any Apple modem, RS-232	any
ADVANCED COMMUNICATIONS EMULATOR (ACE) Shared Systems Technologies, Inc.	IBM PC, compatibles; NEC APC; APL II; OSB; NS; INT	\$150	Y	Y	up to 9600	MPM	object (assembly)
ANSWERING MACHINE (CLOCK) Telephone Software Connection, Inc.	APL II, II+, IIe	\$35 (via tele-delivery)	Y	N	300	Hayes Micromodem	text
APPLE-IBM CONNECTION Alpha Software Connection	IBM PC, XT, compatibles	\$250	Y	Y	300-9600	Hayes Micromodem with Apple Super Serial card, California Computer System 7710A or Mountain Multifunction card	ASCII
APPLE-LINK Computer Applications, Inc.	APL II, II+	\$59.95	Y	Y	300	Hayes Micromodem	ASCII, binary, text
ASCII EXPRESS-THE PROFESSIONAL United Software Industries	APL (all)	\$129.95	Y	Y	9600	MPM	any
ASCII EXPRESS-80 United Software Industries	CP/M	\$169.95	Y	Y	up to 19.2	MPM	any
ASCII EXPRESS-86 United Software Industries	CP/M-86	\$189.95	Y	Y	up to 19.2	MPM	any
ASCII EXPRESS-IBM United Software Industries	IBM PC, XT, PCjr, compatibles	\$189.95	Y	Y	up to 19.2	MPM	any
ASCOM Westico	CP/M, CP/M-86, MS-DOS, PC-DOS	\$195	Y	Y	300-19.2	Hayes Smartmodem	ASCII, binary
ASCOM Lifeboat Associates	CP/M; IBM PC, XT; APL II, II+, IIe, III; TRS I, II, III, 12, 16	\$175	Y	Y	300	MPM	ASCII
Altos - ALT Apple - APL (II, II+, IIe, III, III+) Atari - ATA Columbia - COL Commodore PET, SPET, 64 - COM Compaq - CPQ Corona - COR		DEC Rainbow - DEC Hewlett-Packard- HP (80, 85, 86, 87, 85B, 86B, 87XM) IBM - IBM (PC, XT, PCjr) Interlec - INT Kaypro - KAY NEC - NEC (APC)		NorthStar - NS (A)dvantage (H)orizon Osborne - OSB Televideo - TVD Texas Instruments Professional Computer - TI PC TRS - TRS-80 (I, II, III, 4, 12, 16)		Vector Graphic - VG Xerox - XER Zenith - ZEN Systems: CP/M, CP/M-86, MS-DOS, PC-DOS Most personal computers - MPC Most popular modems - MPM To be announced - TBA	

BUYER'S GUIDE

Package/Company	Systems	Price	Asynch?	Verified Data Transfer?	Baud Rate	Modems Supported	File Type
ASYNCHRONOUS COMMUNICATION CONTROL PROGRAM (ASCOM) Dynamic Microprocessor Assoc.	MPC	\$195	Y	Y	up to 19.2	Hayes	any
ASYNCHRONOUS COMMUNICATION SYSTEM Cyberan Software, Inc.	ALT; NS H; TRS II, 12, 16	\$300	Y	N	300-19.2	MPM	ASCII, binary, other
ASYNCHRONOUS COMMUNICATION VERSION 2.0 IBM	IBM PC, XT	\$60	Y	Y	50-9600	any asynchronous full-duplex modem	ASCII, binary
BABY TALK Microlog	MPC	\$895	Y	Y	up to 19.2	all smart modems	any
BASIC INTERACTIVE TERMINAL SOFTWARE (B.I.T.S.) Software Sorcery Inc.	APL II, IIe	\$54.95	Y	N	300	Hayes Micromodem II, Smartmodem with APL Communications Card or California Computer Systems 7710A	text
BINARY SYNCHRONOUS COMMUNICATIONS PROGRAM—3270 Radio Shack	TRS 12	\$1495	N	Y	1200-9600	any bisynch modems	ASCII, EBCDIC, binary
BINARY SYNCHRONOUS COMMUNICATIONS PROGRAM—3780 Radio Shack	TRS 12	\$995	N	Y	1200-9600	any bisynch	ASCII, EBCDIC, binary
COM 80 Corporation for Distribution Systems	HP 80, 85, 86, 87	\$845	Y	Y	up to 9600	MPM	ASCII
COMMUNICATIONS EXCHANGE Hawkeye Grafix	PC-DOS, MS-DOS, CP/M-86, CP/M-80, Turbo-DOS	\$150	Y	Y	300, 1200	intelligent modems	any
COMMWHIZ I Volsmicro Computer Systems, Inc.	TRS I, III, 4	\$29.95	N	Y	300-9600	Hayes Smartmodem, others	ASCII, others
COMMWHIZ II Volsmicro Computer Systems, Inc.	TRS I, III, 4	\$49.95	N	Y	300-9600	Hayes Smartmodem, others	ASCII, others

BUYER'S GUIDE

Package/Company	Systems	Price	Asynch?	Verified Data Transfer?	Baud Rate	Modems Supported	File Type
CONECT Vector Graphic	VG	\$150	Y	Y	150, 300, 600, 1200	MPM	ASCII
CONTEXT MBA RELEASE Context Management Systems	IBM PC, XT, compatibles	\$595	Y	Y	300, 1200	Hayes	ASCII
CORPORATE MBA Context Management Systems	IBM PC, XT, compatibles	\$695	Y	N	300, 1200	Hayes	ASCII
CROSSTALK Ven-Tel, Inc.	IBM PC, XT, compatibles	\$549	Y	Y	300, 1200	all	any
CPL Cawthon Scientific Group	MPC	\$195	Y	Y	300, 1200	acoustic, most smart	ASCII, binary
CTL Cawthon Scientific Group	MPC	\$195	Y	Y	300, 1200	acoustic, most smart	ASCII
DATA CAPTURE 4.0 Southeastern Software	APL II+	\$65	Y	N	300, 1200	MPM	ASCII
DATA CAPTURE IIe Southeastern Software	APL IIe	\$90	Y	N	300, 1200	MPM	ASCII
DATA CAPTURE 5.0 Southeastern Software	APL II+	\$90	Y	N	300, 1200	MPM	ASCII
DATA CAPTURE/PC Southeastern Software	IBM PC	\$120	Y	N	300	MPM	ASCII
DATA COMMUNICATIONS PAC (MODCOM) Hewlett-Packard	HP 85B, 86B, 87XM	\$200	Y	Y	up to 9600	Hayes	ASCII
DATALINK Link Systems	IBM PC, XT, compatibles	TBA	Y	Y	110-9600	Novation, Motorola, Popcom, Universal Data Systems	ASCII
DATATERM Ebert Personal Computers	TRS I, III, 4	\$29.95	Y	Y	up to 19.2	Word-Christiansen	ASCII, binary
DATA* TRANS Ming - Telecomputing Inc.	APL II, II+, IIe	\$100	Y	Y	300-1200	MPM	Applesoft, text, binary
DIRECT* CONNECT Direct* Aid	IBM PC, XT, compatibles	\$95	Y	Y	300, 1200	any Bell compatible	binary, text

BUYER'S GUIDE

Package/Company	Systems	Price	Asynch?	Verified Data Transfer?	Baud Rate	Modems Supported	File Type
DOS FILE EXCHANGE 1.0 (DFX 2) Arrow Micro Software	APL II, IIe	\$79.95	Y	Y	300	Applecat, Hayes Micromodem II	any
ERA 2 Microcom, Inc.	IBM PC, PCjr, APL IIe	\$429	Y	Y	300, 1200	modem board included	text
HELLO CENTRAL Sams Software	APL II, II+, IIe	\$99.95	Y	N	300	Hayes Micromodem	ASCII
IMPERSONATOR Direct* Aid	IBM PC, XT, compatibles	\$195	Y	Y	300, 1200	any Bell compatible	binary
INTELLITERM Microcorp	IBM PC, compatibles	\$150	Y	Y	110-9600	any	MS-DOS, PL-DOS
INTELLITERM MULTI-TASKING Microcorp	IBM PC, compatibles	\$395	Y	Y	110-9600	any	MS-DOS, PC-DOS
INTELLITERM REMOTE Microcorp	IBM PC, compatibles	\$200	Y	Y	110-9600	any	MS-DOS, PC-DOS
LAW-SEARCH Direct* Aid	IBM PC	\$350	Y	Y	300, 1200	1200 baud	binary, text
LOG-ON Ferox Microsystems	IBM PC, compatibles	\$150	Y	Y	300, 1200	Hayes Micromodem	ASCII, text, binary
MAIL MONITOR Software Connections	IBM PC, XT, compatibles; TI Professional	\$745 (local) \$1195 (remote)	Y	Y	300, 1200	Hayes Smartmodem	ASCII
MC TERM Madison Computer	COM 4032, 8032, S PET	\$195	Y	Y	110, 300, 600, 1200	Hayes Smartmodem, Novation D-Cat, Cat	ASCII, Pet ASCII
MC TERM 64 Madison Computer	COM 64	\$49.95	Y	Y	110, 300, 1200	Commodore 1600, 1650	PET ASCII
MICRO-COURIER Microcom, Inc.	APL II, III	\$150	Y	Y	300	any Hayes compatibles	text
MICRO EASY LINK Advanced Micro Techniques	MPC	\$150	Y	Y	300, 1200	MPM	binary
MICROTERM Micro-Systems Software	MPC	\$79.95	Y	Y	1200	MPM	ASCII, binary
MICRO-TERMINAL Microcom, Inc.	APL IIe; IBM PC	\$99	Y	N	300	any Hayes compatibles	ASCII, binary
MITE Mycroft Labs, Inc.	MPC	\$150	Y	Y	up to 19.2	MPM	ASCII, binary, text
MITE/86 Mycroft Labs, Inc.	IBM PC, compatibles; DEC Rainbow	\$195	Y	Y	up to 19.2	MPM	ASCII, binary, text

BUYER'S GUIDE

Package/Company	Systems	Price	Asynch?	Verified Data Transfer?	Baud Rate	Modems Supported	File Type
MITE/MS Mycroft Labs, Inc.	IBM PC, compatibles; DEC Rainbow	\$195	Y	Y	up to 19.2	MPM	ASCII, binary, text
MOVE-IT Woolf Software Systems	MPC	\$125-\$150	Y	Y	up to 19.2	all smart modems	any
NEW TERM/80 Apparat, Inc.	TRS III, 4	\$49.95	Y	Y	up to 9600	Hayes	ASCII, binary
OMNITERM 1.60 Lindbergh Systems, Inc.	TRS I, III	\$95	Y	Y	up to 19.2	MPM	ASCII
OMNITERM 4.01 Lindbergh Systems, Inc.	TRS 4	\$95	Y	Y	up to 19.2	MPM	ASCII
OMNITERM 3.10 Lindbergh Systems, Inc.	TRS II, 12	\$175	Y	Y	up to 19.2	MPM	ASCII
OMNITERM 2 Lindbergh Systems, Inc.	IBM PC, XT, compatibles	\$245	Y	Y	up to 19.2	MPM	ASCII
PASCAL FILE EXCHANGE (PFEX) Arrow Micro Software	APL IIe	\$45	Y	Y	300	Hayes Micromodem	any PASCAL
PASCAL INTERACTIVE TERM (P.I.T.S.) Software Sorcery, Inc.	APL II, IIe	\$54.95	Y	N	300	Hayes Micromodem II/Smartmodem	text
PC/INTERCOMM Mark of the Unicorn, Inc.	IBM PC; Zen Z400	\$99	Y	Y	300, 1200, 9600	any	ASC, binary
PC* MODEM Solution Software Systems	IBM PC, XT, PCjr	\$59.95	Y	Y	300, 1200	Bell 212 A; Hayes Smartmodem	ASCII
PC TALK Freeware	IBM PC, compatibles	\$35	Y	Y	300, 1200	Hayes Smartmodem (any acoustic and intelligent system)	ASCII
PERSONAL COMMUNICATIONS MANAGER Microcom, Inc.	IBM PC, XT, PCjr	\$100	N	Y	300, 1200	Hayes compatible	text
PERSONAL COMMUNICATIONS MANAGER IBM	IBM PC, XT, PCjr	\$100	Y	Y	110, 300, 1200	PCjr internal; any asynchronous full-duplex modem	ASCII, binary
PERSONAL COMMUNICATIONS Hewlett-Packard	HP 85B, 86B, 87XM	\$200	Y	Y	up to 9600	Hayes	ASCII

BUYER'S GUIDE

Package/Company	Systems	Price	Asynch?	Verified Data Transfer?	Baud Rate	Modems Supported	File Type
P-TERM THE PROFESSIONAL United Software Industries	APL (all)	\$129.95	Y	Y	9600	MPM	any
SANYCOM Sanyo Business Systems Corp.	MPC	\$105	Y	Y	300, 1200	any	ASCII, binary
SMARTCOM I Hayes Microcomputer Products, Inc.	MPC	\$329 (software & modem)	Y	Y	300, 1200	Micromodem IIe	DOS 3.3, Pascal, CPM
SMARTCOM II Hayes Microcomputer Products, Inc.	MPC	\$149 (software)	Y	Y	300, 1200	Smartmodem, 300, 1200, 1200B	DOS 2.0, 1.1, 1.0, CP/M 80, 86
SMART 80 The Microperipheral Corp.	TRS I, III	\$39.95 (cass.) \$49.95 (disk)	Y	Y	300, 1200	Microperipheral	ASCII
SMART TERMINAL Howe Software	TRS I, II, III, 4	\$74.95 (I, III, 4) \$79.95 (II)	Y	Y	up to 9600	any	ASCII
SMARTTERM 100 Persoft, Inc.	IBM PC, compatibles	\$149	Y	Y	up to 9600	any	ASCII, binary
SMARTTERM PC Persoft, Inc.	IBM PC, compatibles	\$125	Y	Y	up to 9600	any	ASCII, binary
ST 80 III Small Business Systems Group	TRS I, II, III, 4, 12	\$150 (I, III, 4) \$250 (II, 12)	Y	Y	110-9600	MPM	ASCII
SYNC/COM 2780/3780 Dynamic Microprocessor Associates, Inc.	MPC, synchronous I/O port required	\$395	N	Y	call manufacturer	any synchronous	any
TELEASYNC TeleVideo Systems Inc.	TVD 801, 802, 803, 800A, TPC-1, TVD 1603 (16-bit)	\$150 8-bit \$195 16-bit	Y	Y	110-9600	Any asynchronous, full-duplex	ASCII, binary
TELE-COMMUNICATIONS Peachtree Software, Inc.	CPQ; IBM PC, XT; ZEN; DEC; TVD 802	\$150	Y	Y	300-9600	any RS-232 modem Hayes Smartmodem, Smartmodem 1200	ASCII
TELEPHONE TRANSFER II Telephone Software Connection, Inc.	APL II+, IIe	\$75	Y	Y	300	Hayes Micromodem, SSS, Novation Appletcat	All DOS 3.3
TELETALK Datasoft, Inc.	ATA	\$49.95	N	Y	adjustable	any direct connect	ASCII

BUYER'S GUIDE

Package/Company	Systems	Price	Asynch?	Verified Data Transfer?	Baud Rate	Modems Supported	File Type
TELETERM-EM Telexpress, Inc.	TRS III, 4, 12, 16; IBM PC, XT; CPQ;	\$125-225	Y	Y	50-9600	MPM	ASCII, binary
TELE 3780 TeleVideo Systems, Inc.	TVD 802, 803, 800, 800A, TPC-1	\$500	N	Y	function of the modem	any synchronous modem	text converted to EPCDIC, transparency mode
TELPAC U.S. Robotics	MPC	\$99	Y	Y	150-9600	U.S. Robotics and compatibles	ASCII
TERMINAL PROGRAM Telephone Software Connection, Inc.	APL II+, Ile	\$35	Y	N	300	Hayes Micromodem II, Ile, with modem card	Apple text
TERM II Supersoft Technology	CP/M 80	\$200	Y	Y	110-9600	MPM	ASCII
THE MICROLINK II Digital Marketing Corp.	MPC	\$99	Y	Y	300-9600	MPM	all
THE MICROMODEM II DISK AND TUTORIAL First Software Company	APL II, II+, Ile	\$89.95	N	N	300	Hayes Micromodem II, Ile	all
TRANSEND I Transend Corp.	APL II, Ile, compatibles	\$79	Y	Y	110-9600	MPM	DOS 3.3 text files
TSMART The Microperipheral Corp.	TRS I, III; ATA 400, 800	\$39.95 (cass.) \$49.95 (disk)	Y	N	300-1200	Microperipheral	ASCII
TVBS (BULLETIN BOARD) Ebert Personal Computers	TRS I, II, 4; IBM PC	\$199.95	Y	Y	300-1200	Bell 103/212 A	ASCII, binary
TXL: TELEX-LINK Cawthon Scientific Group	MPC	\$199.95	Y	Y	300-1200	MPM	ASCII, binary
UAP-LINK Unique Automation Products	MPC	\$250-\$1500 (depending on system)	Y	Y	up to 9600	most 103/212	text, binary
V-LINK 5.1 Datamark Business System	VG	\$250	Y	Y	110-300	Hayes Micromodem	ASCII
VIDEOLINK 88 Windmill Software, Inc.	IBM PC, compatibles	\$59.95	Y	Y	75-1200	Hayes Micromodem or any asynchronous modem	ASCII, binary
VISILINK VisiCorp.	APL II+, Ile; IBM PC, XT	\$250	Y	Y	300, 1200	MPM	ASCII
VISITERM VisiCorp.	APL II+, Ile	\$100	Y	N	110-1200	most communications cards with popular modems	ASCII
Z-TERM - THE PROFESSIONAL United Software Industries	APL with CP/M	\$149.95	Y	Y	9600	MPM	any

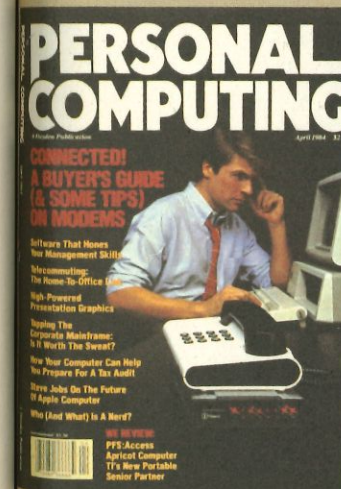
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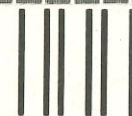
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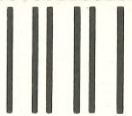
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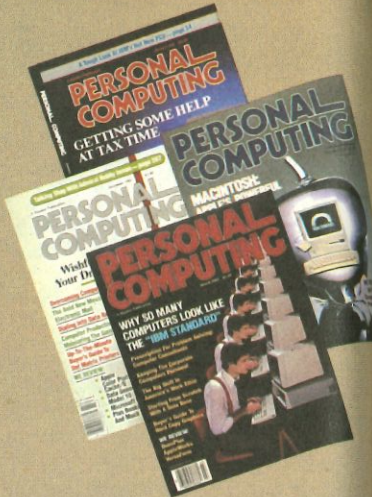
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Last Word

COMPUTING FOR THE BLIND

THE BENEFITS OF COMPUTING are now available to blind or visually impaired users, thanks to the efforts of two American companies.

The Computer Aids Corporation of Fort Wayne, Ind., is owned by blind people, and staffed by both blind and sighted workers. The company provides products "geared to the needs of the blind and visually impaired," says Fred Olver of Computer Aids. The company offers a word processing package, an address filer, a scheduler, a data base manager/forms generator and Talking Transend, a talking version of the Transend 2 program. These packages can be used on Apple IIe systems which the company modifies to convert screen output to synthetic voice output via the Echo

speech synthesizer.

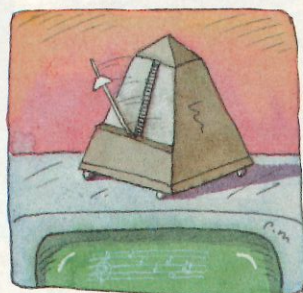
The data base manager can also be used on a modified IBM Personal Computer, and the other programs are being adapted to the Personal Computer, says Olver.

Raised Dot Computing of Lewisburg, Pa., offers Braille-Edit, a word processing program which provides voice and Braille output. It includes two Braille translators which can convert regular text to Braille and vice versa. The program can also work with a wide variety of Braille devices, according to David Holladay of Raised Dot.

For more information, contact: The Computer Aids Corporation, 4929 S. Lafayette, Fort Wayne, IN 46806, (219) 456-2148; or Raised Dot Computing, 310 S. 7th St. Lewisburg, PA 17837, (717) 523-6739. ■

SONGWRITER'S DREAM

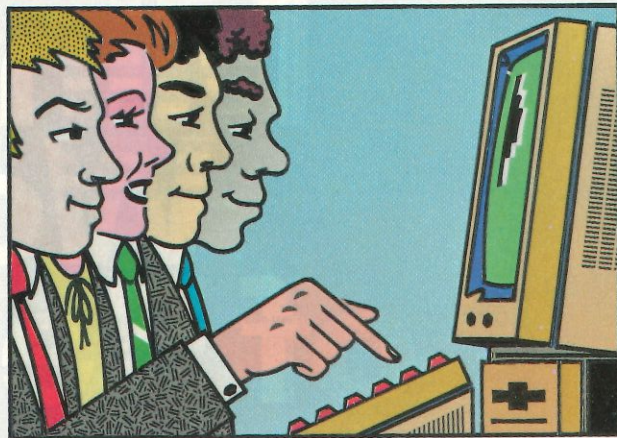
IF YOU'VE EVER DREAMED OF becoming a recording star, EnTech Software of Sun Valley, Calif., might make your dream come true. They're sponsoring the first annual Computer Song Writing Contest, the first competition of its kind. The contest will award cash prizes and free studio time to the three best songs written with a Commodore 64 using EnTech's Studio 64 software program. Winners will be chosen by a panel of music industry professionals and an



nounced on December 15.

All entries must be submitted (on disk) by November 1. Songs can be no longer than five minutes.

Entry blanks and official rules are available by writing to: Computer Song Writing Contest, P.O. Box 881, Sun Valley, CA 91353. ■



WOMEN AND COMPUTERS

THE GENDER GAP IN PERSONAL computing is eroding.

Studies of the United States consumer population conducted by Talmis, Inc., a leading market research concern, found that approximately one out of every four personal computers sold for home use this year will be purchased by women. In 1982, fewer than 10 percent of personal computers in the home were purchased by women.

The study was based on a sample of 1000 households conducted during the first two months of 1984. Women and men alike who

intend to buy computers fall into two groups: One group is made up of professionals who tend not to have children under 18, while families with children under 18 compose the fastest growing group of computer buyers. The former uses personal computers for serious purposes, like bringing work home from the office or doing their tax returns, while the latter tend to buy personal computers as an educational tool for their children.

For more information on the survey, contact: John Bretin, director of marketing, Talmis, Inc., 505 North LaSalle, Chicago, IL 60610, (312) 329-9811. ■

STORE CATERS TO FEDS

FEDERAL GOVERNMENT workers are clamoring to join the computer revolution, and the United States General Services Administration has stepped into the fray with a commitment "to serve the needs of government workers."

A private contractor for the GSA operates a one-

stop computer store in Washington, D.C., and has registered close to \$5 million in sales during the first five months of a pilot program to introduce government employees to computer hardware and software.

The store allows workers to walk into the showroom and get guidance on what sort of computer technology will ease their office tasks. ■

WRITE YOUR OWN NOVEL

DO THE PLOTS OF ROMANTIC novels leave you panting for more? Are those dime store mysteries just not mysterious enough?

Home Computer Software, Inc. of Sunnyvale, California has a diskette-based novel called *Island Love* which may be just what the aspiring novelist and avid reader will never find in a bookstore. *Island Love* is only one of a series of interactive novels, stories where the reader/user decides exactly how the plot will twist.

Home Computer Software is shooting for the widest possible audience with software offerings which include adventure stories, mysteries, historical novels and science fiction. For voracious readers of romance novels, the company is set to publish both teenage and adult interactive stories, according to Bob Katz, Home Computer Software's marketing and sales

vice president.

According to Katz, the user will determine the direction of the story from an list of possible scenarios. The software should be available this summer in retail stores.

For history buffs, the company will market a story called *What if Lincoln Had Lived?* that will offer users the opportunity to fantasize about the shape of the Reconstruction South and America as a whole if John Wilkes Booth had never assassinated Lincoln. For sports enthusiasts, Home Computer Software will pitch a story called *Your Championship Season*, which makes the reader a coach replete with modern sporting problems like drug abuse among professional athletes.

Katz says that the novels will average in cost from \$19.95 to \$29.95 and will run on Apple II, Commodore 64 and IBM PCjr. More information is available from Home Computer Software at (408) 735-8400. ■

A LOVE-HATE RELATIONSHIP

A RECENT SURVEY BY A LEADING market research company for the personal computer industry reports that Americans have a love-hate relationship with computers.

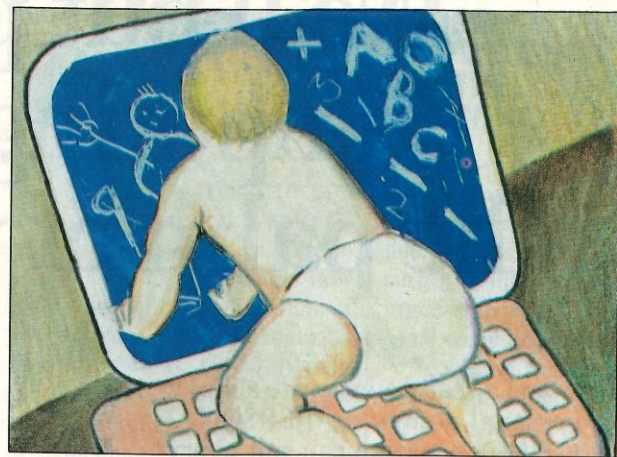
One-thousand households, representative of all United States households at large, were canvassed by Talmis, Inc., the market research concern. Three-quarters of those contacted responded, with 68 percent of the respondents selecting the word "interesting" and 66 percent choosing "helpful/useful" to describe their

perception of computers.

Other popular adjectives were "fun" (45 percent) and "exciting" (43 percent). Just 8 percent opted for the words "intimidating/impersonal" and only 10 percent said computers are "useless."

Perhaps the survey's most interesting finding was the opinion shared by one-third of the respondents who already own computers. They said that their systems are "too hard to use and understand."

For more information on the study, contact: John Bretin, director of marketing, Talmis, Inc., 505 North LaSalle, Chicago, IL 60610, (312) 329-9811. ■



MICROWORLDS FOR KIDS

"COMPUTERS CAN CREATE A special microworld, a 'little world' environment that is rich in discovery and excitement for children," says noted author, educator and computer researcher Seymour Papert.

Speaking before an ITT Key Lecture Series audience at the University of Southern California's Annenberg School of Communications on March 14, Papert detailed three principal ways that computers are currently being used in education: as tutorials; as tools for doing something (word processing or calculating) and as microworlds.

Papert, a professor at the Massachusetts Institute of Technology, defined a microworld as a little world, or slice of reality and an activity for learning, not unlike a construction kit.

"An important mechanism in all learning is confining ourselves to a little piece of reality simple enough for us to understand," Papert says. "And, it is by looking at and living with these little pieces of reality, one at a time, that we learn to understand the greater complexity of the whole world." He added that microworlds are most

important because "they produce better, richer conditions for children, and others, to take charge of their own learning process."

"Communicating information from teacher to student by traditional methods of education can result in 'fractured' or broken knowledge (the student may not grasp the message)," Papert says. "The computer allows children to confront the consequences of their own thinking, to externalize rather than just think internally, what they are learning. The computer, therefore, plays a powerful role in being able to put together the fractured knowledge to produce whole knowledge," he adds.

The professor is convinced that one of the keys to the educational future of our children is the creation of a network of microworlds covering different areas of knowledge which would allow teachers to build a curriculum. And Papert believes that the proliferation of computers in the schools is the key to the future.

"A computer for every child seems to be the logical slogan," he says. "Computers can be used all the time for all purposes. Computers are really the pencils of our age." ■

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America's guide to better computing



PUB IN NYC SERVES UP COMPUTER INFO

THERE'S A PUB ON NEW YORK City's Upper West Side which caters to a burgeoning clientele without ever serving up a highball or an ice cold mug of beer.

Personal computer users city and nationwide can call the bulletin board and message center operated by Bill Arnell, a free-lance record producer and personal computer enthusiast. The sysops, or system operators, trade all kinds of messages which run the gamut from politics and romance to computer programs written by hobbyists, according to *The New York Times*.

"People look up to the sysop," says Jerry Pozniak, a 22-year-old photographer's assistant in Queens who runs the No Name Bulletin Board. "I have people who call at least once a night."

There are at least 50 computer bulletin boards in the New York City area, and their telephone numbers are continually busy. It's a fact of life which deters no one—callers are known to dial board after board, programming their personal computers to redial for hours on end until the connection is made.

The bulletin board owners, many of them teenagers, spend hours designing the programs, such as a medieval village design of a bulletin board called "Paladin's Palace."

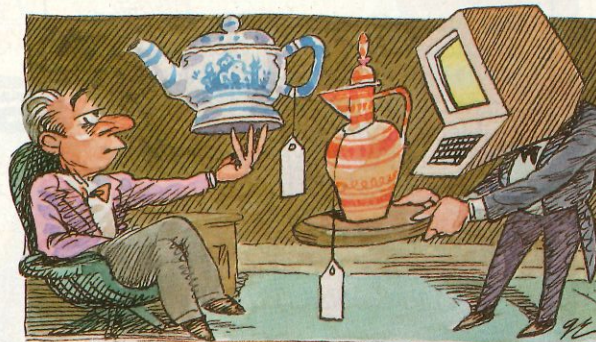
"It's another form of communication, right up there with mailing a letter or making a phone call," says Robert Sweeney, a 16-year-old Stuyvesant High School junior. "There's a certain basic curiosity you have about

it. The ultimate goal is to have the phone busy all the time."

The bulletin boards are simple operations. Inexpensive programs are available which allow a personal computer to receive telephone calls and accept written messages. Modems are the only special equipment required.

Most bulletin board users become perturbed when the boards are used for illicit purposes like trading software or passwords.

"I am working on the attendance code for Bronx Science" High School, read one message recently. "I have a few friends there and pretty soon if we're lucky, the system will be pretty messed up by us hackers!"



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In response to this illicit use, Arnell has formed a group called the New York Sysops Association in an effort to exert peer pressure on hackers.

"We are trying to prevent legal intervention," Arnell says. "The bulletin boards offers a whole new world of communication, of sharing ideas and concepts freely. If the bulletin boards are used for illegal activities, it will kill the medium."

People-Links is one feature of Arnell's Pub bulletin board where callers can write essays about politics or science. Recently, callers have debated the morality of abortion, the invasion of Grenada and the presidential qualifications of Jesse Jackson. ■

WORD PROCESSING ON THE UPSWING

ALTHOUGH ARCADE-STYLE games remain a popular pastime for personal computer users, there's an upsurge of interest in word processing among new personal computer owners.

According to a survey of 1000 United States households conducted in January and February of this year by Talmis, Inc., a market research company for the personal computer industry, only 40 percent of current owners are "strongly interested" in word processing, but 54 percent of those who are planning to purchase personal computers are "strongly interested."

"You have to remember that most people don't want to admit that they're extremely interested in something that others might see as frivolous," Dennis Pelak, Talmis' director of research, says. "When you look at data on interest in entertainment activities compared to serious uses like education or work, it's more important to look at how many people say that they're not at all interested in the entertainment application than the number that say they're extremely interested."

In addition, the survey found that 7.5 percent of the households canvassed owned 6.2 million computers by the end of 1983, with half of that number having made purchases in the final three months of the year.

For more information on the survey, contact: John Brettin, director of marketing, Talmis, Inc., 505 North LaSalle, Chicago, IL 60610, (312) 329-9811. ■

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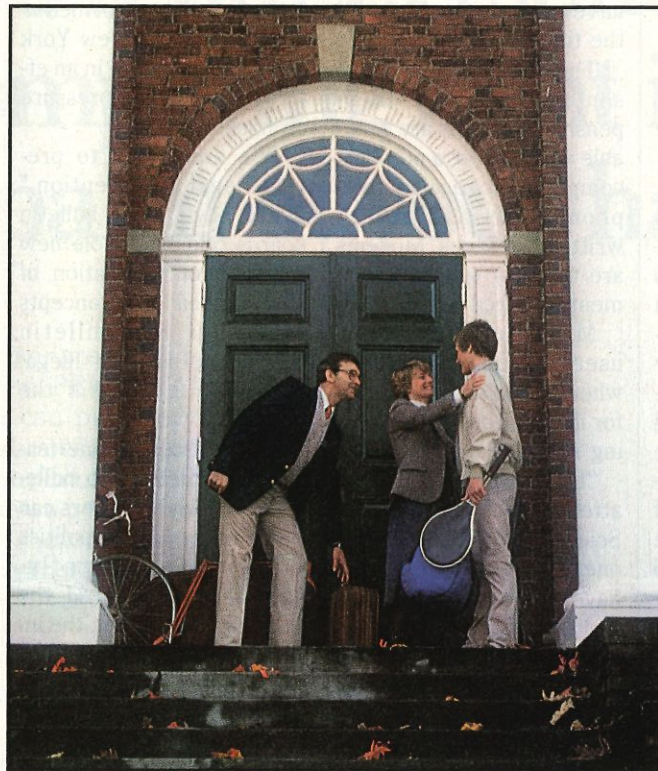
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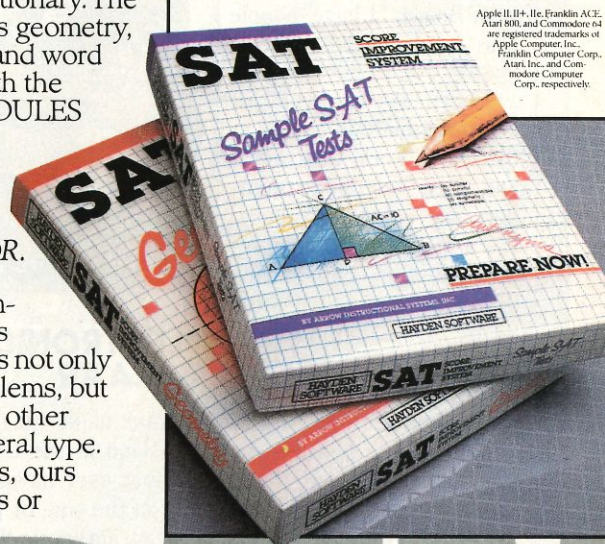
So before the S.A.T.'s come again this year, go to your local software dealer and ask for the Hayden S.A.T. Score Improvement System. Call 800-343-1218, or write Hayden Software, 600 Suffolk Street, Lowell, MA 01853. Either way, we think you'll find it's a better way to get your kids into a better college. Available for the Apple II, II+, IIe, Franklin ACE, Commodore 64, and Atari 800.

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CAN'T BEAT THE PRICE

RESOURCEFUL SOFTWARE seekers who have grown adept at gleaning useful applications from software programs printed in books and magazines might well feel that the best things in life are still free. Now Pasadena Technology Press has simplified the search, announcing the availability of *Lee's Guide to Published Computer Programs—Where to Find Free Programs for Your TRS-80, Apple, or IBM Microcomputer*. In two volumes, the book provides an index to over 8000 programs in BASIC and over 300 programs in Assembly Language which have

been published between 1979 and 1983. The listings have been derived from 160 textbooks and 500 issues of computer magazines, according to the publishers.

All 8000 programs are listed by number, file name, descriptive title and citation, according to the publication in which they are to be found. They are then indexed under 5000 subject headings and sub-headings.

Subjects covered range from astronomy to zoology. Over 300 programs on business, finance, and accounting are listed, as are over 300 programs on business operations. There are listings for 500 games, 500 graphics programs, 300

math programs, 50 educational programs, 100 simulations ranging from auctions to operation of nuclear power plants, 200 on statistics, 76 on sorting, 200 on programming aids and algorithms, 200 utility programs, 10 ham radio programs and 50 stock market programs.

These programs may be studied as guides for writing one's own programs, or they may be entered and run directly on various personal computers. Sometimes the programs must be modified slightly to run on individual machines—the names of several books are listed which provide tables of translation facts for converting a program to a specific personal computer.

The publishers point out that, if the program seeker cannot find a copy of the required text, he can ask his library to utilize several services to obtain copies: One is a national library computer data base service to locate books and magazines at other nearby libraries, and the other is a national microfilm service. Both services are described in the book.

Authored by Henry Lee, Ph.D., a chemical engineer and avid personal computer user, *Lee's Guide to Published Computer Programs* is available from Pasadena Technology Press, 1444 Santa Anita Ave., P.O. Box 3836, South El Monte, CA 91733, for \$27 plus \$2.00 postage and handling. ■

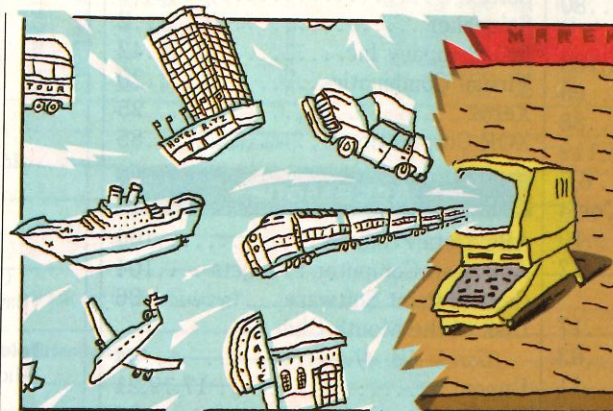
HAVE COMPUTER WILL TRAVEL

JET-AGE TRAVEL HAS MADE every corner of the globe accessible to travelers within hours. But while anticipating a new adventure can be exciting, the hassle involved in arranging a trip—the details of scheduling, booking and transferring—can be exasperating.

Now a new data base has made travel information, reservations and other facets of travel arrangements easily available to subscribers.

Through an agreement with ITT Dialcom, Travel Scan Videotex, Ltd. offers users instant booking capability for all its services, which include information on airline schedules, hotels, cruises, tours, car and limousine rentals, restaurants and theatres.

The service is designed to be used by travel agents, corporate travel managers and home users, and provides unbiased information



including a listing of airline fares. Users access Travel Scan with any computer using a modem and communications software.

"The frequent traveler benefits from up-to-date information on predetermined discounts and fare allowances," says Michael Brent, Travel Scan's director of marketing. "Travel agents benefit because they now enjoy the capabilities of full automation. The home user benefits because of the complete flexibility of planning, booking, and buying travel right in the comfort of his own

home."

Travel Scan estimates that corporate users can save up to 30 percent by subscribing to the service which has a \$25 one-time enrollment fee for companies with 10 or more employees. The cost for an individual subscriber is \$50. Once enrolled, subscribers pay usage fees ranging from \$10 to \$19.50 an hour, depending on the day and time.

For more information, write to: Michael Brent, Travel Scan Videotex, Ltd., 55 Penn Plaza, New York, NY 10001. ■

THE SOFTWARE SEARCH IS ON

INDEPENDENT SOFTWARE Evaluation Services (ISES) of Minneapolis, Minn., has announced its series of Software Searches.

ISES conducts such contests because they feel that many computer owners who have written good programs for their own use don't receive any recognition for their achievements.

The Great Atari Search has already begun, and the deadline for submitting entries to ISES is July 31. The writer of the best overall program will be awarded \$1000 in hardware for the Atari system.

The Great Commodore Search is just beginning, and will continue through October 31. The winner will receive \$1000 in hardware for the Commodore 64 system.

For information on the contests, contact ISES, P.O. Box 27463, Minneapolis, MN 55427. ■

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"Of all the furniture we sell, how many pieces in the \$600 to \$800 range haven't turned over this month?"

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March 5, 1984 when you managed to expense \$12,648? Type in 3/5/84 (or "\$12,648" or "Polo Club"), and... here's your answer, Mr. Tax Man.

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